FIELD JOURNAL OF AN EXPEDITION THROUGH ALASKA YUKON AND THE MACKENZIE DISTRICT

1926 - 1928

by

A.E. Porsild

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FIELD JOURNAL

of

AN EXPEDITION THROUGH ALASKA YUKON AND THE MACKENZIE DISTRICT

being a

botanical reconnaissance with special reference to
the suitability of the country for domesticated
reindeer. Also many notes on the physiography of
the country, its inhabitants, wild life and general
economic conditions.

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Thurs. May 20 - Left Ottawa on the C.P.R. 1.30 a.m. We have a lot of baggage - 18 pieces all told. Train six hours late on account of wash outs on the road.

Fri. May 21 - Passed Winnipeg.

Sat. May 22 - Had a reply from Dr. Seymour Hadwen of University of Saskatoon. He met us at the train. Took rooms at the Empire Hotel and talked reindeer with Hadwen all afternoon. We planned to go on to-morrow night. Dr. Hadwen took us home to supper.

Sun. May 23 - Hadwen came to the hotel in the morning with his car and took us out to the University, where we saw the laboratories and the agricultural part of the university. Also took a trip out to the experimental fields and saw various kinds of stock that Hadwen was interested in. Took the train again at midnight.

Mon. May 24 - On the train we met Dr. Cockfield of the Geological Survey and the entomologist Mr. McDonnel. The former is going to Dawson and the latter to Alberta.

Train stopped for a couple of hours at Jasper Park. If we had known the date our boat leaves, we could have stopped over a day or two and done some collecting. Noticed about a dozen arctic-alpine; Arabis Holboelli, Cornus canadensis, Rumex acetosella, Achillea millefolium, Cerastium vulgatum?, Athyrium alpestre, and Dryopteris Linneana.

Took several photos to get some experience with my new camera, but weather rainy and foggy.

Tue. May 25 - Arrived at Vancouver in the early morning and took rooms at Hotel Vancouver. Went out to find when the boat leaves for Seward. Found that first boat is S.S. "Yukon" leaving Seattle on Saturday at 9 a.m.

Went down to the Hudson's Bay Company and put in an order for liquor for medicinal purposes and for a 2-years supply of tobacco, all to be shipped to Aklavik in the Mackenzie delta.

Saw a boat in the harbour that I knew at once. It was Amundsen's "Maud". Some time ago I had in Ottawa discussed the "Maud" with Hoyes Lloyd who thought that it was still adrift in the ice, which I denied. The "Maud" had recently been purchased on Amundsen's auction by the Hudson's Bay Company to be used in the north. Its name had been changed to "Baymaud".

Wed. May 26 - Took an early train to Seattle where we arrived at 2 p.m. Took rooms at Hotel Frye, where all Alaskans stop. Saw the sights of the town and harbour and went down to the Alaska Steamship Company and got tickets for Saward. Found here a wire from Greenland that the office had forwarded.

Thurs. May 27 - Cleared our baggage through the customs. I had anticipated that we might have trouble as all our stuff was new. The customs officer, however, was most obliging and everything passed through unopened. Wired Ottawa.

Looked up Dr. McBride and later the Lomen people that are all here waiting for the S.S. "Victoria" that leaves for Nome on the 5th of June. They were very nice and promised to help us all they could. Carl Lomen tried to make us change our plans and go to Nome instead of Fairbanks.

Wired L.J. Palmer of the U.S. biological Survey, Fairbanks,

that we would be in Seward about June 6th.

Fri. May 28 - Saw the sights of the town and made several purchases of equipment for the trip.

Sat. May 29 - Up early and aboard the boat at 8.45. Stood up the coast through the inside passage. First port of call is Ketchican.

Mon. May 31 - Arrived at Ketchican in the morning. Raining heavily all day. Went up the valley behind the town following a huge power plant water pipeline for several miles until we came to the dam. Lumber is so cheap that sooner than clearing the very thick underscrub the road had been built of lumber elevated about 10-12 feet above the ground like an elevated railroad. Also of course the snowfall must be very considerable and this way of road building does away with snow trouble.

Flora of course quite exotic and strange to us. Still we noticed several familiar species such as: Linnaea, Kalmia, Vaccinium Vitis-Idaea, Galium triflorum, Drosera rotundifolia, Caltha palustris, Carex limosa, C. microglochin or pauciflora, Rumex acetocella etc.

Tue.June 1 - Arrived at Wrangel late in the evening. Went ashore for a walk and saw the first Eskimo. Couldn't understand them as the dialect is quite different from North Alaska.

Wed. June 2 - Arrived at Juneau the Capital of Alaska. The Governor of Alaska, Mr. George Parks came aboard here. He is going on his yearly inspection trip to northern Alaska.

Climbed a mountain behind Juneau but had to return from 2200 feet because the boat only stopped here for a few hours. The snowline was found at about 2000. The flora looked very interesting up here, but unfortunately we had no time to botanize. Saw Azalea procumbens, Cassiope tetragona, C. Mertensiana, Harrimannella sp. Sibbaldia procumbens, Rhodiola rosea, Streptopus amplexifolius and others. Steady rain.

The Governor told me a story this afternoon which gives a fair idea of the climate of South East Alaska. "A man from Ketchican had been away for many years and when he returned to his home town, he asked the first friend he met: Well, how is everything? .. "It is still raining" was the answer.

Thurs. June 3 - Cordova. Still raining, Bob climbed the highest hill in the vicinity a fair mountain of 2400 feet. He reached the "firn" and had many interesting finds. Harrimanella sp. Moneses uniflora, Menyanthes trifoliata, Lycopodium alpinum, L. chamaecyparisus, Chamaenerium latifolium and Woodsia glabella. Curious enough the last two we found in the lowland only.

We left again in the afternoon and stopped for an hour at Columbia Glacier. Looks much like the glacier of Ege in Disko Bay. Arrived at Valdez in the evening and here had a wire from L.J. Palmer. He is at Anchorage and will meet us there. He had planned to stop over at Cantwell in the Alaska Range where there is a Government reindeer herd.

Fri. June 4 - Continued northwards and stopped at a number of salmon canneries to discharge cargo en route to Seward where we arrived at midnight.

Sat. June 5 - Moved ashore. all hotels are crowded but we managed to get a very modest room with a single bed at hotel "Overland". Train leaves

tomorrow. Made a few short trips in the vicinity.

Sun. June 6 - Left for Anchorage early in the morning. The trip across Kenai Peninsula is by far the most wonderful scenery I have seen on this continent.

The pass is, if I remember rightly higher than the Canadian Nation Railway pass in the Rocky Mountains and the road has to make several loops to clim the grade. Grand Loop it is called and is right up under the glacier tongues in many places. The train stopped at all places of interest so the passengers could get off and take photographs etc.

We arrived at Anchorage early in the afternoon where Palmer met us at the station. He had secured rooms for us at Parson's Hotel. Had a short walk out into the flat and rather uninteresting country. Train starts again tomorrow.

Saw many familiar plants but nothing of particular interest.

Found that nearly all *Arabis Holboelli* which is very common here were infested with lice which again were infested with an other kind of lice or external parasites. Never seen that before. It reminded me of Fabre's story of th ants that keep plant lice and "milk" them.

Mon. June 7 - Left in the morning again. On account of the tourists that want to see the country the train never travels at night. During the daytime it stops at all points of interest and the conductor acting as "Fremdfuhrer" gives the passenge a lecture on the sights.

We stopped at Curry where the railroad had built and operates a ver nice hotel. Probably one of the best hotels in Alaska. From the hotel an imposing suspension bridge takes you across a deep canon with a good size river. The bridge is so long that even a slight wind sets it swinging and it almost takes a good sail to cross it without getting seasick.

Tue. June 8 - Left Curry at 7.00 and arrived at Cantwell at 11.30 a.m. Stopped for half an hour at a place where we had a good view of Mt. McKinley, the highest top in North America,I think.

Cantwell is situated at the north end of Broad Pass at the north end of Mt. McKinley National Park. It is in a broad valley between the McKinley chain and a series of much lower mountains to the east. The place is at about 63° latitude north and about 2100 feet above sea level.

At present the population of Cantwell is only two, namely a Swede by name of Carlson and his partner who runs a roadhouse. He also traps in the wint and does some prospecting. As a matter of fact all Alaskans are prospectors. Ther is one main building and two or three small bunkhouses. When the train stops the passengers have their lunch here as the trains don't carry a dining car.

There were no guests and we got the two bunkhouses to ourselves. The reindeer herd was reported to be somewhere in the vicinity. We made a trip out to the hills to the east trying to locate the herd but failed as the wind wasn't favourable. Reindeer usually travel against the wind and we saw signs indicating that the herd had moved east to the other side of the mountain.

This was too far to go today, so we returned to the camp in the evening. We collected quite a few plants and had some very interesting finds e.g., *Eutrema Edwardsii* which was found at an elevation of 2500 feet. Also *Equisetum scirpoidea*.

Wed. June 9 - Started out same way as yesterday. The herd had come back to this side of the mountains and we had no trouble finding them, in fact we could see them a long ways off.

It soon started raining, so we sought shelter for a while at the herders tent at the foot of the mountain. There is a white man in charge of the h and he has with him 3 or 4 Eskimo apprentices and one Indian boy. We talked Eskimo with the boys.

The animals looked rather poor and were badly infested with parasit

due to close herding. The original herd came from Good News Bay on the Kuskokwim a few years ago and had numbered 1200. About half of them had been lost on the 700 mile drive owing to starvation caused by hard crust on the snow. Also many had strayed. Palmer thought this was largely due to wrong management.

Since the herd arrived in its present location it had been necessary to close herd since large bands of caribou passed through the country at times and several deer had been lost in this manner.

While we watched the herd we had the good fortune to see a young caribou bull which walked down to join the reindeer herd. It wasn't nicely received for the young reindeer bulls almost immediately chased it out of the herd and after several attempts it gave it up and disappeared over the hill.

The herd was kept in the higher parts of the foothills now and the bulls and yearlings and steers were kept separated from the does and the new fawns. Not counting the fawns they probably numbered about 600 the herder told me.

The U.S. Bureau of Education who owns and maintains this herd had experienced constant trouble with the herders. The Eskimo that came in with the herd soon got homesick and did not want to live so far away from their home country. Others were tried with the same result. Then Indians were tried, but were found still more unsatisfactory. Some of the Indian herders had left the herd without even giving notice and for some time the herd had been without herders until somebody notified the Bureau of Education.

The white man in charge now was a good reindeer man and Palmer thought that he would be able to make a success of it.

We added considerable to the plant collection of yesterday and spent the evening preserving the specimens.

Thurs. June 10 - Heavy rain all day. Made two trips to the hills to the west and collecting lichens mostly. Eutrema is quite common and was found growing abundantly in tall spruce timber. There is a good growth of lichens - mostly Cladonias, as soon as you get above the low, swampy floor of the valley.

The flora is a curious mixture of arctic-alpine and boreal species, which, however, may be explained by the proximity of the high mountains in the McKinley chain. Still species as Eutrema, Draba alpina, Androsace chamaejasme and Pedicularis capitata are really true arctic species. It took 4 hours to preserve the specimens.

Fri. June 11 - Rain again. There is a train to Fairbanks today and, as we could not do much more here just now, we got ready to go to Fairbanks where we can do a lot even if it rains.

It would be well worth while to go back later in the season when the flora is a little more advanced. The snow had only disappeared a few days ago and only the earliest species were in flower. I should think that the snowline here is to be found between 5000 to 8000 feet.

Said good-bye to Carlson and his partner Thomson. They had both done their best to make us as comfortable as possible and shown us real northern hospitality.

We arrived at Fairbanks at 6 p.m. and found all the hotels crowded, so we were glad to accept Palmer's generous invitation to make his station our headquarters during our stop at Fairbanks.

Sat. June 12 - Preserved our last specimens collected at Cantwell and changed the paper on the rest of the collection.

Palmer took us out to Fairbanks College where we met the Director Dr. J. Bunnell who showed us the buildings and excellent library and laboratory equipment. An experimental farm is connected with the College and practical courses in agriculture are given as well. Last semester 60 students were attending the college. Most of them were white but also Indians and Eskimos had attended.

The College evidently had been built and equipped to meet the demands of quite a few years ahead and they had a wonderful collection of instrument and equipment.

Palmer had a Ford car and took us around and showed us the different roads. They are not in very good shape owing to the lack of good natural road material. Palmer generously turned his car over to us that we could go out in the country and cover as much ground as possible.

Sun. June 13 - We went up the Fox road in the car. Stopped for an hour at a creek where gold dredging is carried on. Abundant insect life. Beetles, butterflies, dragon flies and wasps. Flies and mosquitoes were not wanting either. Frogs are very abundant.

The road winds up through a series of rounded hills and ends at Pedro Dome 2640 feet, where there is an exposure of bedrock. Botanized for several hours and made some interesting finds. Trip was 46 miles. Preserved the specimens till after midnight.

Mon. June 14 - Drove out 41 miles on the Richardson Highway. The road leads through low picea swamps (muskegs) where the road body is built up by sand and gravel. These muskegs have a very interesting Carex flora. Heavy showers in the afternoon.

Tue. June 15 - Wrote notes and letters and made out expense account. We had a wire from Kokrines where the largest reindeer herd in the interior is located. The season inland is much more advanced than on the coast and this herd is now getting ready to be rounded up. This particular herd is managed on a somewhat different principle th the herds on the coast and Palmer suggested that Bob should go down and attend the round-up while Palmer and I went a couple of hundred miles south on the Richardson Highway where Palmer has been doing grazing reconnaissance since last year.

Kokrines is about 300 miles down the river and the herd is located in the Kokrines Mountains between the Melozitna River and the Yukon.

Wed. June 16 - From the collection of lichens made at Cantwell we took out a type collection, to be used for future field identification, of 82 types that we identifie by help of a small collection that Palmer had of typical specimens identified by the specialist G.K. Merrill of Rockland, Me. Wired for Henry's Flora of British Columbia and went to the bank to get money.

Thurs. June 17 - Bob left this morning on the train to Nenana, where he transfers to the steamboat down river.

Palmer has to go to Anchorage before we can go east. In the meantime I want to finish the botanical work in the Broad Pass region and intend to go as far south as Healy.

Wrote a preliminary report of our work to the Department.

Drove out to the Experimental Farm about 15 miles west of Fairbanks where the superintendent Mr. Gasser showed me around. They have for some time been doing experiments in breeding Yak with other kind of cattle. The idea is to develop a more hardy breed. Mr. Gasser told me that when they first started cultivating the land they had been much troubled by the frozen sub-soil. After a few years of cultivation, however, the level of the frozen ground had been so much lowered that no effect was noticeable now.

Very hot today, 94 F.

Fri. June 18 - Went south on the train with Palmer. On the train I met Ben Eilson the pilot of the Wilkins Polar Expedition. Mr. Eilson has crossed and re-crossed the Endicott Range several times and was able to give me a lot of interesting information about the country. From what he said a drive of reindeer across the mountains would hardly seem feasible. The only pass where a herd could go through would be the

Anaktuvuk and John River Pass. Eilson told me that there were many Eskimo camps between Point Barrow and Herschel Island.

Arrived at Healy where I took a room at the roadhouse. Botanized on the west side of the valley in the afternoon.

Good level land when you get up on the plateau.

Sat. June 19 - Very hot day. Wrote down notes and preserved my collections from yesterday. Started out for the mountains to the east at 1 p.m. Followed the railroad tracks across the Nenana bridge to Healy Coal Mine that supplies most of the coal burned in the interior. The coal is of the lignite type. A large slide had taken place this morning and the entrance to the horizontal shaft had been completely covered up. Fortunately the slide took place in the early morning before the miners had gone to work in the mine.

One of the engineers told me, that the total output did not exceed 25,000 tons a year and that the coal was inferior to the coal of the Matanuska valley near Anchorage.

It was still too hot to climb the mountain, so I stayed all afternoon at a prospector's cabin in a small creek above the coal mine.

Started up the mountain at 7.00 p.m. Going bad, on account of heavy underbrush and soft sphagnum moss. Lots of mosquitoes. Had climbed 4000 feet at midnight and was almost above the line of vegetation. It was nearly dark, when, passing from the south to the north side of the ridge I had to go through a narrow rocky pass. Turning around a corner I nearly stepped on a large brown or black animal and I suppose I jumped a couple of feet in the air. What I first took to be a large bear, turned out to be a family of six porcupines gnawing the bones of a dead caribou.

Sun. June 20 - Descended on the north side collecting plants as I went. Back to Healy in the early morning. Slept and changed the paper on my collection. Wrote down notes from the trip yesterday.

Mon. June 21 - Left Healy early in the morning and walked down the railroad tracks to a place called Linite about five miles north of Healy. Stopped at a prospector's cabin. This place is said to have the driest climate in Alaska. The snowfall is so slight that horses can feed out all winter and my host Mr. James Gibson who has lived here for a number of years, told me that one foot of snow was about the average.

From the cabin I followed a small creek for about two miles. Along the creek there is a splendid growth of spruce and birch and many old signs of beaver. Gibson keeps horses and improved some of the grassy backland by burning. The grasses are mostly caespitose Festucas and Deschampsia. The burning destroys the wiry old leaves and sheaths and gives the central part of the tufts a chance to expand. The burning is, of course, done in the early spring.

From the end of the creek I ascended the side of the valley over a series of terraces - probably old lake shore lines.

After the last terrace a vast plain or gently undulated plateau extends far west and south towards the McKinley range. From the mountain I had command yesterday of a splendid view over the whole country.

The vegetation is of a decidedly xerophilous type and might well be called steppe or desert. After leaving the edge of the plateau I never saw enough water to get a drink.

Last winter Gibson told me there wasn't enough snow on the backland plateau to use a sleigh.

I wish somebody would try island ponies in this country. They would do a lot better than ordinary horses.

Mr. Gibson is an old timer in the country and like all these men, who have lived a solitary life, he was fond of talking and an excellent host. I sat up most of the night listening to him and learned a lot about the country and

the people that made the country into what it is now.

Rabbits are extremely common this year. While Gibson cooked the supper I went out for half an hour to get a few rabbits for his dogs. I could have killed any number, but only shot four, which was all the dogs could eat. Saw a porcupine down at the river. Rather unusual for a porcupine to be travelling down here.

Tue. June 22 - Went up the creek with Gibson who wanted to get us some bluefish for lunch. Beautiful scenery. Took some photos of old beaver houses and dams. Expected Palmer to be back from Anchorage on the train today, so I had my things ready when the train came in at noon. Palmer was there and I therefore said good-bye to my hospitable host. We arrived in Fairbanks in the evening. I brought back 5000-6000 specimens from the trip.

Wed. June 23 - Worked up my notes from the trip.

Thurs. June 24 - Got ready for the trip on Richardson Highway. We had originally planned on a ten-day trip, but a message arrived from the coast, saying that the season was much advanced and that the reindeer owners would have their herds brought in ahead of schedule. This meant that we should have to catch the boat leaving Nenana about July 1st. so we only took provisions and gasoline for five or six days and besides a tent, sleeping bags and camping outfit. Palmer's car is a Ford runabou and it was pretty well loaded up when we were ready to leave in the afternoon. We stopped for the night 51 miles from Fairbanks at Taylor's fox ranch. The business is carried on by a young relative of Mr. Taylor's. He planned to go in for foxes rather extensively this summer and was building fences and pens.

The Alaska Road Commission crew is working on this section of the road and they had a big camp here. Went out for a walk before dark looking for rabbits. Saw none. At Fairbanks they are so thick that dog owners go out in the evening and shoot all they need while sitting in the car. Saw a lynx.

Flora very different from the Fairbanks flora and in many respects resembles that of the south side of the Alaska Range at Curry.

Fri. June 25 - Started at 8.00 a.m. Road is getting worse and worse, especially after we had crossed the Tanana at McCarthy. There is no bridge but the Alaska Road Commission operates a ferry worked on the same principle as the ancient Rhine ferries. The current works on the rudder and propels the boat. A cable is suspended across the river and over this cable runs a pulley attached to the boat by a rope. The river is only about a quarter of a mile wide. While waiting for the ferry we discovered that one of the front wheels had almost come off.

The motor started to make trouble in the afternoon and almost lost its power, so that we had to push to get up some of the hills. After several fruitless inspections we finally found, that one of the coils were not functioning right and one cylinder didn't fire at all. The trouble was soon fixed and we had no more troubles.

When we got up in the mountains we found the rivers very much swelled on account of the hot weather which had increased the melting of the glaciers very considerable. On several places the road body had been washed away altogether and in one or two places the bridges had been torn down by the turbulent waters. In one place a temporary bridge had been built and in another we managed to ford the river which was quite shallow. The weather had been very hot recently. The day we left Fairbanks 104o had been reported from Anchorage while the theremometer registered 94° in Fairbanks.

I am not greatly impressed with the road although allowance must be made for the difficulties in road-building in this country. In many places the road is excavated into the steep gravel slopes facing the river canons. Occasionall a slide takes place and part of the road shelf is covered up. All cars therefore carry a pick and a shovel. In one stretch of 8 miles the road is so narrow, that

two cars cannot pass each other. If you do meet a car, you get out and toss up with the other driver to see who is to back up four miles. Or else you get your shovel out and dig a niche where your car can get in while the other fellow goes by.

Fortunately the traffic isn't very heavy and we only met one car the whole day.

We travelled all day till 9 p.m., when we put up for the night at Paxon's roadhouse on the south side of the divide.

Here we were charged $7.00 each for the privilege of spreading our sleeping bags on the attic floor. Supper and breakfast was also included in the price.

Sat. June 26 - Heavy rain all day. Climbed the terraces of the east side of the valley. Botanizing is rather disagreeable work today. The timber isn't bad, but where there is a dense underbrush the flies are pretty bad in spite of the rain.

Decided to go back to the summit where the prospect looked better. Left Paxon's at noon and collected as we went along.

Camped in the evening at the foot of Miller and Castners Glaciers at a place called Miller. There used to be shelter cabin here, but it has not been kept in repairs for some time.

This is the first time we had occasion to use the Wood's silk tent and sleeping bags. Both proved very satisfactory. Leaving the camp,

Sun. June 27 - We followed the creek leading to Miller's Glacier. Traversed the delta several times looking for a possible ford. Tried several places but the water was too swift and deep. Finally had to climb the glacier where we made a safe crossing a couple of miles back.

Followed the north side of the glacier tongue of Castner Glacier. From the glacier and the bordering hill we had a magnificent bird's-eye view of the Pass below. Country and flora very alpine. Elevation between 6000-8000 feet.

Followed the Castner Glacier stream down to the Highway where we could cross on a bridge and were back to camp late in the evening loaded with good specimens, after a hike of at least twenty miles.

Mon. June 28 - Broke camp and started early making frequent stops at places of interest. There are a lot of "alpine meadows" and good reindeer pasture. Soon we had the vasculums filled with specimens and then used the back seat of the car as a collecting case.

Crossed at McCarthy at 4 p.m. where we stopped to boil the kettle. Back in Fairbanks shortly after midnight after a drive of about 400 miles.

Tues. June 29 - Preserved the specimens and worked up my notes. Packed and got ready for the trip to the coast. Went out in the afternoon to Smith Lake behind the Experimental Farm and collected some aquatic plants.

Wed. June 30 - Last day in Fairbanks. Got the baggage ready and changed the paper on the collections.

Thurs. July 1 - Took the train in the morning to Nenana where we transferred to the S.S. Gen. Jeff. C. Davis - a sternwheeler of ordinary river type of about 100 tons burden, plying between Nenana and Holy Cross. This boat and a sister ship are the last of the Yukon fleet. They only carry about 15 to 20 passengers each and are distributing freight for the lower river, brought in to Nenana over the railroad.

Before leaving Fairbanks Palmer loaned me all his reindeer files so I could go through them on the trip down river.

Fri. July 2 - Worked on the reindeer files all day. Passed the town of Tanana where we were stuck on a mud flat for a hour or so.

Sat. July 3 - Passed Kokrines where we had expected to pick up Bob. Palmer's assistant Miller had been up to the reindeer herd about 30 miles back from the river and brought word out that Bob wanted to stay for another week to complete his work and would take the next boat.

Sun. July 4 - Independence Day. Finished the work on the reindeer files. Arrived at Holy Cross at 6.00 p.m. This is as far as the steam-boat goes and the last part of the trip is very uncertain. The Northern Commercial Company has the mail contract and maintains the service by two small gasboats running between Holy Cross and St. Michaels.

We received news ~~running~~ over the wireless in the evening, that the Matanuska had left the coast and was to connect with the M.B. Agnes at Old Hamilton. The latter may be here in a couple of days.

We got a bunk each at the local roadhouse.

Mon. July 5 - Collected plants near a small lake back of the village. The flies are a holy terror and although there were many interesting things I couldn't stand it very long at a time.

Governor Parks arrived at Holy Cross en route for Fairbanks. He was travelling in a small Government speed boat and was accompanied by several other officials.

Tues. July 6 - Awaiting the arrival of the M.B. "Agnes".

Wed. July 7 - The "Agnes" arrived at midnight and left in the afternoon. On the boat I met Dr. Alex Hrdlicka from the Smithsonian Institute. We stopped during the night at the Pilot Station and continued in the morning. A drizzling rain all day.

Thur. July 8 - En route to Old Hamilton.

Fri. July 9 - Arrived at Old Hamilton at 4 a.m. Was raining heavy. Frank B. Williams from St. Michaels was here with his tug boat "The Warrior" to meet us. Left in the afternoon for Kotlik in the Yukon delta where we had to wait for the incoming tide in order to cross the bar. Rain and wind became worse during the evening and we decided to wait here until better weather. There is a native village and a trading post here. The country is low and marshy.

Sat. July 10 - Storm-bound at Kotlik. Raining and blowing all day. Hiked across island examing the flora and making extensive collections.

Sun. July 11 - Left the camp early in the morning and arrived at Pastolik at 7.30 a.m. The camp is situated on the low tundra near the corral. Besides the herders several other reindeer owners had come down to attend the round-up and the camp looked like a village with about a dozen tents. I pitched my tent near Williams.

Last year the corral fence had caved in and this spring a new and improved fence had been built after the instructions supplied by Mr. Palmer. We spent the early morning and forenoon in making changes in the chute part of the corral. The natives at first were very reluctant about working on a Sunday but Mr. Williams who talks the native lingo soon convinced them that it would be quite alright. The main herd was seen in the vicinity of the corral during the afternoon and three herders were sent out at night to bring a bunch in next morning.

Mon. July 12 - The herders brought in about 1500 animals and they were with little trouble brought into the main corral. A small bunch of about 100 animals were segregated into the inner holding pen and operations started. Only a few boys were experienced and things didn't run very smoothly the first few hours. During stampedes the first few hours several animals were injured and had to be killed. I think the natives were not very sorry about this because they wanted meat badly.

The country is rather low rolling tundra with a few creeks running at right angle to the coast which is constantly being washed down by the action of the sea leaving a low cut bank showing the composition of the ground.

On a substratum of clayey loam rests a layer of solid ice from a few feet to fourteen feet thick. On top of this is a layer of muck of considerable thickness. The muck is everywhere frozen until within six to eight inches of the surface. The maximum thawing in an average summer probably never exceeds one and one-half feet. At this time of the year the low parts of the tundra are still wet and only the ridges where often the muck layer is wanting and the clay exposed, fairly dry ground is found.

The old corral was built on low ground near the creek. After two years of use the trampling of the animals had cut up and totally destroyed the vegetation within the corral fence. The protective layer of vegetation destroyed the thaw had penetrated down through the muck and caused the ground ice to subside and gradually disappear. In this particular place this caused a general sinking of four to six feet. The corral fence naturally fell in and at present the site of the old corral was transformed to a shallow pond. The new corral had been built on the dry ground on top of the lower hill east of the creek. It was built to accommodate from 1000 to 1500 animals and was of the figure eight type. Only the central part had been built out of solid split poles while the holding pens at both ends were merely fence posts set down at six foot distance with wire between. When in use burlap was hung over the wire so to give an impression of something solid that the deer wouldn't try to go through.

The total area probably comprised about 50,000 to 60,000 square yards. The herd had been driven across the small creek and on the west side of the hill from which direction the corral is invisible when the animals come over the crest of the hill they find themselves between the two wings of the outer corral. After passing the wings a couple of heavy wires are strung across and the opening closed with burlap. The central part of the corral has to be well-built out of solid split poles. Every ten or twelve feet a heavy pole is put down and braced up on the outside.

Between the poles a shallow ditch is dug for the palisades that are laced to a heavy crossbar with wire. Nails are used to some extent but are not as good as lacing. The palisade wall don't have to be quite solid but can be set out with a few inches of space between. The wall is eight to ten feet high. When the herd start to mill in the outer corral a small bunch of about one hundred animals is cut out and driven to the funnel-form entrance to the central pen which opens into the main corral with a large sliding gate. This pen shouldn't be too crowded because the animals are apt to be very excited when they find themselves captured and there is considerable danger for the young fawns. From the other end of this pen a small sliding gate leads into the long and narrow V-built chute. Two or three men are stationed in the pen and from time to time drive a small bunch of six to ten animals into the chute. In the wider part of the chute another man is stationed to let the animals out through the chute one at a time. The end of the chute that is so narrow that only one animal can pass at a time is closed by a low swing gate. Here the best man is stationed, he directs the operations and calls out the ear mark and sex to the tally-man whenever an animal passes. I was often surprised to see how well this man could tell the different marks. In this herd there probably were over twenty different marks and while I often was at a loss myself to see whether an animal was ear-marked or not this man very seldom made a mistake.

This herd which totals something like ten thousand head is of mixed ownership. 75% are owned by Williams who directs the management of the herd, pays expenses and employs herders and supplies necessary equipment. The balance is owned by a few whites and a number of natives. A system of ear-marks have been worked out by the Government and besides some of the large owners have a private

tag usually in button shape which is placed in the lobe of the ear. There are so many different ear-marks that the cutting has to be very carefully done in order not to cause later disputes. The disadvantages with the tags are that they cannot be read until the animal has been captured.

There are two kinds of round-up. One in July when the fawns are a couple of months old. Here all fawns and many yearlings that escaped marking last year are marked and the majority of the male fawns are castrated. The next round-up is in October after rutting season.

When an animal emerges from the chute a man stationed there grabs it at the horns with his left hand while a quick jerk at the flank easily will throw a fawn or even a yearling. After it is thrown it is easily kept down while two other men perform the ear-marking and castration. After some practice the whole thing only takes a few minutes and the animal is liberated.

With a few sanitary precautions such as free use of a germicide to keep the instruments and the wound clean there is little danger of infection. The worse danger is really caused by the blow flies. The old Lapp chewing practice has entirely been done away with and modern instruments such as the emasculator is now used for the castration.

We found a surprising large number of unmarked and uncastrated animals in this herd and Palmer told me that the reason was that this was the first time that this particular herd had been properly rounded up. Before a simple corral had been used and the animals had been roped in the old fashion. Williams estimated that 500 or 600 fawns passed unmarked last year. The segregation of animals to be castrated rests entirely with the tally-man who in this case was Palmer, and of course only the best and healthiest looking bulls are picked out for breeding. A few bulls showed signs of mixture with caribou.

After passing the chute the animals are held in a holding pen until the day's work is done, then two or three herders are sent out with them to take them as far away from the main herd as possible and to stay with them to prevent any mix-up. In case any of them do get away every animal is marked with a paint brush and red paint when passing the chute so that no animal will be counted twice.

Record of Animals

In this case where the herd has never been counted throughly before, the record keeping job is very important. Williams is the big owner but besides there are about thirty minor owners of from a few to about 500 animals. Some of these contribute to Williams for herding and handling expenses but most of them don't and as they are all natives and have no money to pay it is the most convenient to let them pay in fawns. The increase hitherto runs about 60 to 70% and the fawns are marked accordingly to numbers of adult females actually counted.

As the recorder has no information about the number, he has to keep score of the females and successively distribute the fawns. The form used here thus have one column for adult females and one for adult males (steers and bulls (in addition to similar for unmarked yearlings and adults that escaped marking at the last marking) and finally one for female fawns and one for male fawns. The fawns run about 50% of each sex. Later the marking will be very simple as only the fawns has to be marked.

This system of mixed herding is bound to make lots of disputes about the just distribution of fawns and it is therefore a very important thing for Williams that Palmer is here to do it. He is well-known among the natives and everybody takes his decision as final and fair.

There are different ideas of how long it is safe to keep a herd confined in a corral of the size that can easily be constructed here. Palmer only thinks 24 hours is safe but in several cases, especially if water is to be had, no serious losses will be incurred even if confined for a couple of days.

Under the roping system the whole herd was confined during the whole round-up and a loss of about 10% was expected as inevitable.

Tues. July 13 - Started early this morning as a new bunch had been added to the remainder of the 1500 animals in the large holding pen. Things go very well today and probably about 800 animals passed through the chute. I practiced castration and roping and took active part in the work. I got kicked and beaten all over and was pretty tired when we finished at 12 p.m.

Wed. July 14 - Attended the round-up. Studied ear marks and general handling. Took a number of photographs but don't expect to get very good success as the light was very poor. Very few animals are roped under the modern way of handling and only when an animal gets away from the boys that are supposed to grab it when it emerges from the chute, roping is resorted to. The rope used differs from the rope used by cattlemen in having a bone ring attached to the end through which half the rope is passed thus forming a large loop, the whole rope is gathered up in the right hand and thrown. Sometimes the animal is caught either by the horns or legs but mostly it isn't. Even the best roper of the bunch had over 50% failures.

Thurs. July 15 - Williams went to St. Michaels in "The Warrior" this morning.

Fri. July 16 - I have been studying the bookkeeping part and kept the books today. Collected a few plants near the corral. It has been raining the last few days and herding is not very pleasant. Last night when the weather was very bad the two fractions of the herd got too close together in the fog and some of those that have already been through the corral got mixed up with the rest of them. We have on an average been handling from six to eight hundred animals a day which is not as much as we should be able to do with a crew of fifteen men. Williams came back from St. Michaels with Bob who had arrived yesterday on the Matanuska.

Sat. July 17 - Botanized on the tundra west of the camp. Heavy rain all day. Found a couple of large mammoth tusks in the muck-cut bank two miles east of Pastolik. Studied the ground ice of which there are many good exposures where the muck has been washed away by the last storm. The disappearance of ground ice where the vegetation has been destroyed as referred to earlier is interesting to note and disproves the Norlund theory of the deterioration of the Greenland climate "Medd Om Greenland Volume ". I took a few photographs illustrating this.

Sun. July 18 - Williams went back to St. Michaels and Bob went with him. Most of the boys are out on the range looking for the herd that escaped from them during the rainstorm the other day. Consequently no work is done in the corral. I used the day to work up my notes and on reindeer handling.

Mon. July 19 - Williams and Bob are back again. The boys brought back the missing herd of which, however, nearly 40% had already been marked. Worked in the corral all day. Planning to make a trip up to the winter range fifteen to twenty-five miles back of the coast. It was first thought that we could go up the Pastolik river in "The Warrior" and proceed cross country to the headquarters of the winter range but as it seemed that we could make better time walking we decided to start out on foot next morning or the day after.

Tues. July 20 - Collected plants along the creek. Raining.

Wed. July 21 - A perfect day for our purpose although it is pretty hot. Breeze relieved us from the flies in the morning but at noon the wind went down. We left Bob behind to supervise the work and the party consisted of Palmer, Williams and myself and one of the reindeer boys as a packer. The foreland is rather flat and level tundra dotted with small pools and sloughs. This plain was submerged by the sea in fairly recent time and a rise of sea level of only ten feet would bring the sea back to the foothills again. From the plain the foothills rise abruptly ten

to fifteen miles back from the shore and form a rolling plateau apparently without any distinct system. The highest points are probably from five hundred to one thousand feet above sea level. The formation I believe is volcanic. The hills are low and rounded and very little rock is exposed anywhere. These mountains strike from the intersection of the branches of the Yukon delta north-east towards the foot of Norton Sound and crosses the Yukon River to make a bend towards south where it almost joins the Kuskokwin. The hills to the south of where we were rises to 2600 feet.

During the trip across the low tundra we collected in several places and consequently did not travel very fast. Climbed the hills in the afternoon about 3 p.m. and tried to locate a tent said to be somewhere in this vicinity. In the evening a wind came up and as we failed to find the tent we made an open air camp in a small depression in a hillside where we got fairly good shelter by a dense growth of mountain alder. There is no spruce till about twenty-five miles south of here. Preserved my day's collection of plants and tried to sleep. A heavy rain started at 1 a.m.

Thurs. July 22 - Rain kept on all morning and as nothing could be done we thought we might as well go back to the camp. Started at 3 a.m. and got soaking wet getting through the alder bushes. A dense fog covered the low tundra but the Eskimo boy never hesitated. There was no path and no wind to keep the direction by and we had failed to bring a compass. The boy, however, had no trouble and we didn't see the corral until we were a few hundred feet from it. We were all pretty tired and cold and had walked twenty-eight miles during the last twenty-three hours. I slept the rest of the day, went out swimming in the bay in the afternoon. The sea is very shallow and we had to go out half a mile to get water enough to swim. In spite of the cold weather the water was pretty warm.

Fri. July 23 - The round-up was finished. Quite a few animals had escaped but bringing these in would involve capturing and corralling the whole herd and this wasn't thought to be worth while. We packed up our baggage and the collections so that a larger part of our baggage can be left at St. Michaels to be shipped to Nome on the mail boat.

We used our light Woods silk tent for fourteen days in rainstorm and sunshine and I am very well pleased with it. It is absolutely water and mosquito proof and satisfactory in every respect. I wish we had taken one a size larger. It is alright for two men but hardly big enough for three.

Sat. July 24 - Started out early on the high tide in order to take "The Warrior" as near to the coast as possible. We had had a very good time and I believe the fourteen days I have spent here have not been wasted. Arrived at St. Michaels in the early afternoon. In the afternoon looked at the Yukon fleet on the beach, nearly fifty vessels from a few hundred to more than a thousand tons are lying high and dry. When the railroad was opened and the gold rush days over the whole freight could be handled by two small river boats now running. We boarded several of them: The Klondyke, the Dawson, and the Emperor. One of them built in 1901 had cost one million dollars and the first trip to Dawson paid the whole investment with interest. Now they are lying on the beach falling to pieces. In most of them not even the machinery has been removed. Went out swimming in the Bay, the water is perfect, probably more than 62 degrees F.

Sun. July 25 - Inspected the cold storage barge used for the reindeer business. Had dinner with George Butler who runs Williams' store and is J.P., postmaster and U.S. Commissioner. Fixed up with Williams.

Mon. July 26 - Made arrangements with the N.C. Co. to have them ship our baggage. Went out bathing in the East Bay. Left in "The Warrior" for Unalaklet at noon.

stopped at Q~~u~~iqeteriaq to wait for the tide. Went out collecting and found a lot of good things. Spent the evening with the famous Sineruk Mary. Probably the biggest native reindeer owner and quite a personality. She is said to have been a beauty once and was known all over Alaska because she offered $1000 to the white men "who could give her a baby". No one won the prize. Now she has about a dozen adopted children and a native husband. At first when we entered she thought that we "were halfbreeds from Barrow" because we spoke the "Malamute" and I guess looked rather dirty too. We had a great time speaking Eskimo and eating dried fish. Mary' husband came from Teller and could understand us fairly well. I guess we understood about 50% of what he said when he spoke in native dialect. Left at midnight.

Tues. July 27 - Arrived in Unalaklet at 6 a.m. and stopped with Traegers. Fixed up our collection from Q~~u~~iqeteriaq and went bathing in the afternoon. Alfred Lomen was here when we came but went north to Egavik with Palmer. Arranged for a trip up the Unalaklet River next day. George Butler came with us from St. Michaels and is coming too. Hired a small power launch to take us as far as possible and three Kayaks to go down in.

Wed. July 28 - Started at high tide at noon and could go no further than about eight to ten miles in the launch. The water too fast for kayaks upstream. Camped and hiked about ten miles to the north east. Rather low partly forested hills. Vegetation type very monotonous. Back at the camp at 8 p.m. Started down river in the kayaks at ten o'clock and decided to stop at a native camp for the night.

Thurs. July 29 - A heavy rain started at 4 a.m. and kept on the whole day. Talked Eskimo and had a good time. As there seemed to be no change at two, we started down and gave up further collecting. Arrived at Unalaklet at 4 p.m. beating up against a heavy west wind.

Fri. July 30 - Hiked out to the corrals about three miles south of Unalaklet. Big well-built corral built by the Lapps. The shore is built up of sandunes almost covered with a dense covering of grass and enormous quantities of driftwood. Behind the dunes shallow lagoons and sloughs and a low tundra almost at sea level.

Discussed several things with Lapps. For one thing the ski question In Alaska most people I have consulted seem to believe that skiing in the interior is unpractical because the snow is so soft. The lapps of which some had seen the whole country from Dawson to the coast. Their statements were all to the effect that skis can be used just as well as in the old country.

Sat. July 31 - M.S. "Donaldson" arrived at 8 a.m. and we left for Nome at noon. Called at Egavik a couple of hours and stopped for the night at Golofin where the Lomen Co. have a big herd and a cold storage plant.

Sun. Aug. 1 - Looked over the cold storage plant, corrals, etc. and took several photographs of the reindeer selected to be taken out next Christmas. Saw here the p cess of breaking reindeer to a grain-hay diet. Went swimming in the bay in the after noon. Left Golofin at 2 p.m. and arrived in Nome at 12 p.m. Mr. Ralph Lomen invited us to stop at his house in Nome.

Mon. Aug. 2 - The N.C. Co. at St. Michaels forgot to ship our baggage and our departure from Nome will thus be delayed eight days. Had dinner at Judge Lomen's. Visited the mining dredges, etc.

Tues. Aug. 3 - Palmer left on the "Donaldson" and is going back to the interior. He has done everything to help us out and I am almost sorry to see him leave. He is a very fine fellow and is very well thought of everywhere.

Tried to catch up with my correspondence and mailed several letters The Bureau of Education schooner "Boxer" is here and is going to Barrow. I made

arrangements to have them distribute 3350 lbs of dried fish along the coast for use when we go north in January.

Wed. Aug. 4 - Visited the gold dredges and the engineer showed us the whole works. Bob went down to Bluff 60 miles east of Nome with Mr. R. Lomen in the "Nunivak" and will be back in a couple of days.

Thurs. Aug. 5 - Rain. I have had a bad cold for the last few days. Getting a little better now. Radioed Ottawa. The $2000 I asked for before leaving Ottawa has arrived. Made arrangements with the Miners Merchants Bank etc.

Fri. Aug. 6 - Visited Dexter Creek. Walked a couple of miles back across the Anvil Mts. (1050') and collected a good many interesting things in Copper Gulch and on the southern slope. Returned in the afternoon when my vasculum would hold no more. Preserved my plants in the evening.

Sat. Aug. 7 - Ralph Lomen and Bob returned on the "Nunivak" early in the morning. He had a large collection of interesting plants. Several that I had not seen here at Nome. Rain in the afternoon. Changed blotters and packed dry specimens. Prepared a report to Ottawa. Received wire from Mr. Finnie about payment of our tobacco and liquor sent to Aklavik by H.B. Co.

Sun. Aug. 8 - Changed and dried blotters. Wrote a report to Mr. Finnie and wired about the payment. Bob collected plants in the afternoon. M.S. "Donaldson" arrived from St. Michaels at 9 p.m.

Mon. Aug. 9 - Wrote letters. Packed up and prepared for the trip north. We go up on the "Nunivak". Mr. Crawley is going to Teller and will if possible take us up to the Diomedes first. Storm and rain.

Tues. Aug. 10 - Wrote and packed. Packed plants, etc. Storm and rain.

Wed. Aug. 11 - Ditto. Expect M.B. "Silverwave" from Kotzebue tomorrow. Mr. Carl Lomen came back. Stormed but quieted down at night. Wired Mr. Finnie.

Thurs. Aug. 12 - Weather fine. Silverwave came in early in the morning. Talked business with Carl Lomen all day. Took a swim in the afternoon. Water fine 60 degrees F. Very hot day. We leave tonight! Left at 10 p.m. Fine and calm.

Fri. Aug. 13 - Passed by Teller. Prince of Wales 1 p.m. Stopped one hour. Set out for Diomede at 2.30. Little Diomede at 6 p.m. Very calm and easy landing. Met Mr. Jenness who had been here for a couple of weeks excavating old houses. Boat left at 7.30 p.m. for Teller. Fog coming up at 11 p.m.

Sat. Aug. 14 - Cold north wind and fog. Started up on the island at 10 a.m. Highest point 1300 feet. Flat top with rather precipitious slopes on all sides. Only one landing place where the village is. Peculiar stone houses with a wooden porch at entrance. Long tunnel entrance eight to ten meter (or 25-30 feet.) Collected lots of lichens. Very interesting vascular plants. Stopped at school house where Jenness lives. Met missionary, Norwegian, very religious. Nysitter only white man on island at present.

Sun. Aug. 15 - Temperature 41 degrees F. at noon. Cold and stormy. A storm sprang up last night and the fog became thick and icy. During the day the swell became heavier and heavier but I still think a boat could land to the south west of the village. An umiaq from Cape Serze north of East Cape arrived here yesterday for trading but could not leave today. They do not speak Eskimo and dress and look very different from the natives here. I think they are Tschuchtsche. Jenness and I

visited two of the Diomede houses. One was very primitive. The entrance or torsuk is very long and the entrance in the middle of the floor. The house is built exclusively of stone with an inside panel of driftwood. No sleeping platfor You sit on the floor. Sealgut window in the roof.

Eskimo Potato -Kajoq. They eat Oxyria, Saxifraga Nelsoniana too.

Mon. Aug. 16 - Temperature at noon 43 degrees F. At 10 p.m. 44 degrees. Storm same as yesterday. Abated a little towards evening. Fog, icy and nasty wet. Followed the coast or shore east as far as we could - one or two miles and climbed the side in a narrow creek or ravine. Difficult and dangerous because the moss is very slippery. Stopped at a rookery halfway up and took a dozen of photos of birds. Crept down between the rocks and after about half an hour the birds came as close as two feet from camera. Light bad. Collected more lichens and have now 106 collections - some are duplicates - about 75 specimens, some 20 mosses and six additional species of vascular plants. Back at 6 p.m. wet and tired. A boat could land today but no boat could get out from land. "Sibirian" still here. I don't envy them in their tent. We can do very little more on this island. Hope we get a chance to go to big Diomede. Collected "potatoes" for Palmer and for Experimental Farm in Ottawa.

Tues. Aug. 17 - 44 Degrees F. at noon. Stormy and foggy as yesterday. Bob went to the north end of the island alone while I stuck around the village and took some photos of the houses etc. He added some five or six more species to the list. Paid a visit to the missionaries. Quite nice people but awful narrow-minded. Not the kind of missionary that should go to such a place.

The natives had a dance tonight in honour of the "Sibirians". Four of the audience worked the drums while some local and one guest danced. The women did not dance while we were in the house but I heard that they joined when we left. A real storm at night, very heavy surf. A boat might still land at the corner.

Wed. Aug. 18 - The storm abated and it was quite calm in the afternoon. We tried to get a boat to take us to Big Diomede but the owner would not leave till 3 p.m. when it was too late. The Sibirians left at 6 p.m. Took several photos of their departure. Went to the west corner of the island and found some additional species while Bob got three at the north corner. Expect the Silverwave tomorrow. 44 degre F. at 10 p.m.

Thurs. Aug. 19 - Diomede Island.

South west rain and fog. No Silverwave. Mr. Jenness has been troubled with chronic appendicitis and has hardly been able to eat for the last two or three days. He is rather gloomy and worries a great deal. The "Bear" had promised to take him back to Nome about the middle of August but has not showed up yet. Probably it has ice trouble. I had a bad attack of angina or something similiar.

Fri. Aug. 20 - Diomede Island.

The M.B. Nunivak arrived this morning from Teller. It had a bad trip going across. Silverwavc is going to pick us up going north. It was delayed in Teller. The surf rather bad. The natives wouldn't go out with the umiaqs. The boat's dory came in and landed safely. Nunivak cannot return today on account of the weather. Stayed in bed all day. Jenness worse.

Sat. Aug. 21 - Diomede - en route Teller.

Weather improving a little. Decided to leave at 11 a.m. Rain. Sea rather rough between Diomede and the Cape. Stopped one hour at Wales but couldn't stay here so proceeded although the weather was bad. Head wind and bad swell, fog and rain. Everything is getting wet. The boat leaks and the motor

threatened to stop a couple of times. The two Lapps in charge of the boat are not sailors at all and if it had not been for Bob we would probably have had serious trouble. Very bad surf all along the coast. We hoped to get shelter towards Pt. Spencer. The tide is against us too, so we made poor time. The prospect was none too bright at 11 p.m. Bob was getting tired, he had had the wheel since we l Diomede this morning and was wet and cold. I remember while winding up my watch that I wondered if it was any use. At 12 we got a little shelter and the Lapps could relieve Bob. We arrived at Teller at 4 a.m.

Sun. Aug. 22 - Silverwave had left Teller yesterday and was instructed to pick us up at Prince of Wales but the Captain found the wind too strong. The wind we were beating up against in the small "Nunivak" all night was too strong for him to leave and he had to return at 11 p.m. We were all in and after having brought our stuff to the roadhouse we were ready to hit the hay. First I had to empty my suitcase which had been soaked with sea water. Some of my Diomede films were dripping wet and probably spoiled. Otherwise only some clothes were wet. We expected the "Silverwave" to leave towards noon so we got up at 11 a.m. only to find that the boat would not leave that day. Dried my clothes.

Mon. Aug. 23 - Captain is still doubtful about the weather. The boat has been christened "Permanent Wave". He is no sailor. Collected a few plants around the sandpit and the lagoon. Changed blotters.

Tues. Aug. 24 - Left at 6 a.m. A doctor from the Bureau of Education and his wife were passengers and Mr. Johnston who is in charge of the Kotzebue Sound reindeer station. We got a head wind and the Captain anchored at Tin City. Stayed here all night.

Wed. Aug. 25 - Pulled out at noon. No wind when we reached the Cape.

Thurs. Aug. 26 - Stopped a few minutes at Deering and arrived at Kewalik at 6 p.m. Left the boat here.

Fri. Aug. 27 - Went up the river with Mr. Johnston in the L.R. & T.C. launch. "Buckland" arrived without incident at Candle at 9 a.m. Rained all day. Examined an exposure of ground ice and peat in a creek. Got wet in the rain. Saw the L.R. and T.C. cabin offered us for winter quarters in Candle. Wired Mr. Wagner on S.S. "Boxer" to inquire about the fish shipped north on "Boxer".

Sat. Aug. 28 - Went up to the dredges where another good exposure of ground ice was to be~~s~~ seen. Heavy rain. Left down stream in the evening the water was low and the boat was too heavily loaded. Discussed ground ice with the owner of the dredges, Mr. Mathews who has been mining here since summer and was going out on the "Silverwave".

Sun. Aug. 29 - Stormbound. Got reply from Mr. Wagner to the effect that the 3300 lbs. of fish had been distributed according to my instructions.

Mon. Aug. 30 - Left Kewalik in the "Buckland". To the reindeer camp is two days trip. First day we arrived at Igloo Point at the mouth of the Buckland River. Here the main corral is situated and there is a cabin and warehouse accommodation. Nobody is living there except during marking time in summer. We put up in the ver comfortable cabin belonging to the Lomen Reindeer and Transportation Company. The distance from Kewalik to Igloo Point is 37 miles and we made it in perfect weather in about seven hours.

Tues. Aug. 31 - Started up river for the camp about twenty-~~five~~four miles up the river. The river is much larger than the Candle River and big boats can go up as far as

camp. It has been freezing the last couple of nights and the landscape is all in autumn colours. No collecting can be done and I don't expect we shall get anything in that line out of this trip. It was quite cold in the morning in spite of the exceptionally fine weather. I believe it was about freezing when we started out but towards noon the thermometer rose close to 70 degrees. The river is getting cold too and the water here, as out in the Bay measured 50 degrees F. only. Collected some drifting Ruppia as we approached the delta yesterday. I believe there is lots of aquatic plants to be found if we had a chance to dredge the river bottom.

The reindeer camp is situated on the eastern bank of the river across is the native village. This is not very large counting only about 150 people. Now most of them are away, some gathering fuel for the winter while some are in berry-picking camps and some have gone about fifty miles further up the river to the timber to cut logs. Fairly good sized timber is to be had there. The cabins in the camp are built of native logs. Some measuring as much as 1½ feet in diameter. Johnston accommodated us for the present in the main cabin the back of which is used as a store and warehouse.

Wed. Sept. 1 - We helped Mr. Johnston to clear the place up to get room for provisions for the winter. The company has the whole trade in this place and has a fairly good supply of everything. We consider the possibility of staying here till our start for the north instead of going back to Nome. We will then have a very good opportunity to see the reindeer herd from which the Government is likely to get deer if the deal with the Lomen Company comes through. Further we shall be able to see the breaking in of sled deer and have good chances of seeing the winter range and herding.

Mr. Johnston is encouraging us to do it and promises to have another cabin put up in a couple of weeks so that we may have better accommodation to work up our collections and reports. Further we shall be able to save considerab money as we can live here for less than a dollar a day I think. I see now that we will have to consider this if we shall not have to ask for more money advanced. Went through Rydberg's Fl. of Rocky Mts. that I received in the mail last time and marked species given for Alaska and Mackenzie and Yukon.

Thurs. Sept. 2 - We decided yesterday to stay here and I made up a list of things we shall need from Nome. I am going there on the first mail boat to settle differen business matters with the bank and the Lomen Company. We shall then have to take all our stuff up here. There is better chances to get good dogs here than down south. I have already been offered two teams at a reasonable price. We are going to build our own sleds of the Greenland type. This will be easy here as Mr. Johnsto has a fairly good tool shop. We started downstream in the afternoon in the "Blosso headed for Igloo Point where we arrived at 7 p.m.

Fri. Sept. 3 - Fair weather with a south east wind, just enough to set sail. The motor made trouble now and then owing to too much oil. The tide was going in so made poor time and didn't arrive at Kewalik till ten hours after we left. No mail boat. I found Hamburger in his cabin with a bad leg. The day before he had got his leg in the well of his scow and had his clothing caught by the propeller shaft. It's a wonder he didn't lose his leg as nobody could stop the engine. It actually stopped by the strain from his leg. The motor is 15 H.P. and I really don't see that it can be so. The leg don't seem to be broken but he had got a bad cut from the set screws and he has lost a lot of blood. I tried to help him in different ways but he is a pretty bad patient and I don't think my efforts have done much good. Started raining in the evening and during the night the wind went down to south.

Sat. Sept. 4 - Raining heavily and blowing hard from south west. We could not

get up to Candle because the wind blew the water out. Read and slept. No place to sit or be except in Hamburger's very dirty place. Listened to him telling about "old times". He has lived in this place for twenty-six years and never been outside. Has been to Nome a couple of times, that's all. He is married to an old native woman who lives in Candle where he has another house. He works for the trader Robertson and Greenberg and is hauling goods up the river most of the time in a scow. I believe he has the mail contract between Kewalik and Candle too.

He is a kind of wreck and I believe he goes strong on booze and beer. He is a German and came to U.S. when he was fourteen. He has worked in a saloon in Candle most of the time but as he says himself, never been fond of a steady job. He says he is content as he is now. He can work when he feels for it and loaf when he feels for that. He is very fond of mechanics and machinery and enjoys "Popular Science" and gets lots of ideas from reading it. He is entirely uneducated but has acquired information from reading during his Alaska years.

Sun. Sept. 5 - Still raining. We cannot go up the river today either. I thought of starting across country for Nome once but after the last week's rain I don't think I shall attempt it. The creeks will be full of water and the tundra awful wet. I think the mail boat is in Nome still. Robinson and Greenberg who own the radio station know, but they are the kind of people who will not give you any kind of information gratis. The idea is that you shall send a telegram. For my telegram with reply paid to Mr. Wagner they charged me $6.50 of which fifty cents covered the Signal Corps fee while the rest is their charges. The Lapp Isak who runs the boat has been trying all day to solder the oil pipe to the carburetor that is leaking badly. I don't think he had much success. It is too bad the trail across country is about twenty miles.

Mon. Sept. 6 - Still raining but looks as if it would clear up. Isak wants to go up today. I dressed Hamburger's leg with hot bandages. The knee is badly swollen. We left in the afternoon and got a mile below Candle without any trouble. We went aground once and I noticed that the river bottom is covered with some aquatic plants but I couldn't get any specimen. I think it is a Cellitriche and a Potamogeton. I am sure we ought to try some dredging. Arrived at Candle at 7 p.m. Silverwave expected at Kewalik tonight.

Tues. Sept. 7 - Raining all morning. Saw Mr. Hershman, the successor to Mr. Mathews and talked ground ice. He went with me up to the creek. They are hydrauling now. Saw a lot of fine exposures. Worked up my notes when I returned. The mail came up this morning. No mail for us. I wonder if the Captain is keeping it this time too. There must be lots of mail this time as the boat made connection with the "Victoria". The second class mail is coming up during the afternoon and night and our mail may have got "mixed" up with that.

Wed. Sept. 8 - No second class mail either. Somebody is making a mess of our mail. I don't think the mail service is much better in Alaska than in Greenland. Raining all morning. Mail boat is expected at the sandspit this evening. We left Candle at 2 p.m. and arrived at the spit at dusk. No mail boat. At 12 we saw its lights out at the entrance of the channel where it anchored during the night.

Thurs. Sept. 9 - Left Kewalik at 7 a.m. No mail on the boat.

Fri. Sept. 10 - En route Teller.

Sat. Sept. 11 - Arrived at Teller in the morning. "Stormbound" rest of day.

Sun. Sept. 12 - Ditto. Left at 6 p.m.

Mon. Sept. 13 - We anchored up behind Sled Island twenty-one miles west of Nome. Too much swell.

Tues. Sept. 14 - Left Sled Island in the early morning and arrived safely at Nome at 3 p.m. Found here that Carl Lomen had left on last "Victoria". Was heartily welcomed by Messrs. R. and A. Lomen and invited to stop at R. Lomen's place. Here at last I found some mail. Two letters from home was all besides a very kind letter from Dr. Isaiah Bowman of the American Geographical Society asking my permission to bring my name up at the next election of fellows of the Society.

I also received the Flora of British Columbia and Gray's Manual and thus at last I have the literature I have needed so badly all summer.

Wed. Sept. 15 to Sat. Sept. 18

Made purchases of various articles needed for our exile in Buckland Camp, e.g., sled material, dog chains, etc., etc. Packed all our stuff in the Lomen Warehouse to have it ready for shipment on the "Silverwave". I intend to take the next boat myself in order to have time to work up the collections from Seward Peninsula made by Mr. Chas. Thornton during the last ten years. Most of his plants have been identified by a Mr. Standley of the Smithsonian Institute, but it seems as was the case with the collection in Fairbanks (Bureau of Biological Survey that quite a few have been misnamed. Silverwave was dispatched to Teller to get a cargo of oil before she goes north. Next day a storm came up and the "Wave" will probably be late on this trip.

Mon. Sept. 20 - Still storming. Silverwave is probably behind Sledge Island. Have started on Thornton's plants. The Flora of B.C. proves very useful also Rydberg has a lot of the Alaskan species. The man who has identified the plants is going to publish a handbook on the Flora of Alaska and according to Thornton the M.SS has been ready for three years. I believe it was the same father I saw in Washington in 1921. I do hope he will get it out before I get back to Ottawa. I made very detailed notes on the collection in my Flora of Alaska so that I can use it in identifying our collection from this season's. The work takes a long time as I have to make sketches of numerous species not in my handbooks. I hope to complete the work before I have to leave. Besides this work I would like to get time to finish our collection of lichens from Cantwell. While in Fairbanks I made assisted by Palmer and his collection a preliminary identification and took out type specimens in vials. This collection I intend to carry with me to the North for use in the field while I send the main collection to Ottawa this fall. I want Dr. Malte to send it to the Lichenologist of the Canadian Arctic Expedition and have my names checked by him. Our collection of vascular plants I shipped to Buckland where we have to bring them in shape for shipping. I also intend to make a preliminary identification, this will help me later in collecting in Mackenzie. When I get through with them I shall know more than 75% of the species in Alaska and probably an even larger proportion of the species we may expect in the Mackenzie and Yukon.

The last three evenings I have been showing Thornton our collection and I am sure he is very interested in it. He knows quite a few of the plants and is very keen on the job. He is Recorder, U.S. Commissioner and Agent for American Railroad Express but even as he takes his work very seriously he still gets time to do a little collecting every summer. The best parts of his collection is from a trip in the Sawtooth Mountains in 1919. I almost regretthat we did not make that trip instead of going to the Diomedes. The Sawtooth Mountains are not very high but still there seems to be a unique and remarkable flora. A number of species from this trip has not been found anywhere else in Alaska and several, I believe are endemics.

Tues. Sept. 21 - Silverwave came back and left in the evening. I met Ross Kinnie of the Alaska Road Commission again. He left on the "Donaldson" for St. Michaels but is coming back and will probably go north on the Silverwave. He showed me a new map of north western Alaska and found a copy for me. Worked on Thornton's plants and went up in Dexter Creek with him in his car in the evening.

Wed. Sept. 22 to Sat. Sept. 25

Am almost through the collection. Have been several times round in the neighbourhood of Nome either with Thornton or Miss Lomen. The roads though somewhat soft after the heavy rain are much better than around Fairbanks. Altogether I think that there are about 50 cars in Nome. Tonight a serious accident happened just outside the town at Dry Creek. A car with three persons turned over and the driver and one of the passengers were killed. The third person states that the cause was reckless driving. I went to a basketball game tonight in Eagle Hall between the "Sourdoughs" and the "Chee-Chockos" score 23-27. After the game fashionable dancing.

Discussed reindeer with Mr. R. Lomen till 5 a.m.

Sun. Sept. 26 - Finished the first set of Thornton's collection. Weather fine. Played chess with Judge Lomen. "Victoria" is expected tomorrow night. "Silverwave" left Kotzebue this morning.

Mon. Sept. 27 to Thurs. Sept. 30.

Finished the collections and got ready to leave. "Silverwave" came in. "Victoria" arrived yesterday. Ralph Lomen leaves on the Victoria tomorrow. Not much more for me. I wonder why my Flora of N.O. Bugt published in June has not yet. C.H.O. wrote about four months ago that he sent copies for me. Father wrote he sent copy too. Had letter from Bob. He's in Candle. Bought fresh fruit. Got an old bicycle wheel for a speedometer, skates, alcohol, two boxfuls of old magazines for winter reading, etc., etc.

Sat. Oct. 2 - Victoria left. Saw Ralph Lomen off at 2 a.m. Settled account with the Lomen Company and with bank. Arranged to draw on Nome cheques as far as Barrow. Left at 12 p.m. Weather fine but a little headwind.

Sun. Oct. 3 - Teller at 4 p.m.

Mon. Oct. 4 - Ship unloaded. Took a hike over the tundra south east from Teller. Bad going tundra very wet. Silverwave could have left early in afternoon but didn't. Left Teller at 6 a.m. Tin City in afternoon. Unloaded some freight.

Tues. Oct. 5 - Weather fine. Captain wouldn't leave. Went ashore and climbed the Cape 2300 feet. Much snow above 1000 ft. Magnificient View, Diomedes, East Cape and the coast of Siberia way E. & S. of the Cape. Bird's eye view of the north west coast of Seward Peninsula and the lagoons towards this Shismareff. Very windy at the summit. A prospector had sunk a hole here long time ago. Bad place to mine. The last 200 ft. of the cone was ice-covered and swept by a howling blizzard. On my way back saw the abandoned mining shacks and engine buildings, etc. Tin has been mined here for many years with very indifferent success. Started snowing in evening.

Wed. Oct. 6 - Left Tin City and went back to Lost River where better shelter.

Thurs. Oct. 7 - Lost River. Left in afternoon easterly wind when passed Cape. Stopped at night at Shismareff for an hour. Blowing hard. At 12 anchored up 10

miles north of Shismareff awaiting daylight.

Fri. Oct. 8 - Arrived at Deering. Went ashore to see the dogs Magids Bros. want to sell but only to find that they all were gone. Too bad, it was a fine team. We left at 3 a.m.

Sat. Oct. 9 - Arrived at Kiwalik early in morning. The "buoy" was gone so the Captain could not go in! Anchored off the bar and waited for somebody to come out. Nobody came out and the Captain didn't want to send a boat in. Towards noon the wind increased to south east storm and no boat could go in. The Lomen motor launch "Blossom" left for the Buckland without communicating with us. I wonder who is responsible for letting the boat go when the mail boat is here? Mr. Johnston or Bob is not here anyway as they would not let it go. A bunch of some twenty natives were on the boat. After they passed us the wind was too much for them and they had to turn towards the shore. Turning back was out of question. I followed them with my glasses for about an hour but the air is to hazy that they finally disappeared and I couldn't make out whether they got ashore or rounded the point.

Sun. Oct. 10 - Perfectly calm and fine. We expected the Captain to pull in but he wouldn't even let the dory leave. If no boat came out before 4 p.m. he would leave for Kotzebue. The idea is absolutely ridiculous. I insisted upon having the boat put me ashore but arguing is of no use. Happily a boat came out at 4 p.m. and we got in, but that day too was lost. Isik was on the sandpit and starts overland to Buckland as soon as the tundra gets a little hard. We went up to Candle. I had a lot of baggage and thought it best to take that to Candle too. Shall have to pack my books and leave the rest to be hauled over on the first snow.

Mon. Oct. 11 - Candle. Went up to the East Creek to see the ground ice exposure.

Tues. Oct. 12 - Columbus Day. At Candle. Isik wanted to wait another day the weather is perfect and it freezes at night. Went to the creeks again and did some photography. (See further notes on ground ice). Looked some dogs over that were offered for sale, not much good!

Wed. Oct. 13 - The ground is still too soft says Isik so I went to my old haunts the creeks behind Candle. Examined some former hills that I had seen a month ago but that had been thawed down to level by hydraulic operation in the meantime the remnants of the hills exhibited some, partly ice containing gravel and muck mounds. Where the bottom was reached the ice was seen to rest on the gravel (? old riverbed) Different kinds of prehistoric bones were scattered around. I collected several in order to send them to Ottawa to see if any time can be derived at by this means - Weather still perfect.

Thurs. Oct. 14 - As yesterday. Isik finally decided to start and about 8 a.m. we pulled out of Candle. All my baggage save my most needed books I left here, but still I had a pack of 40 lbs to carry the 28 miles to Buckland.

The tundra was not very bad still a little too soft and we could not keep full ahead. About midway we realized that we could not make the camp before the dark. The country is 100% reindeer country. Flat and rolling. The numerous creeks have cut slight depressions in the foreland from the foothills that here are 15-20 miles withdrawn from the sea. One or two places the hills sends out a low ridge that ends in a kind of promontory or bluff. The Clem Mts. is such a ridge and forms the divide between the Kewalik and Buckland river. The highest point is only 1400 feet. We passed a little to the south and from here could see as far as Deering and to Kotzebue to the north. Towards evening when we cooked some coffee in a dry creek I stretched out and in spite of my sore back could not help to enjoy the beauty of the landscape. J.P. Jacobsen's descriptive verse

of the "jydske Hede" came to my memory.

Descending the east side of Mt. Clem we had to find our way by a flashlight and decided to camp as soon as we got down in the creek where grass was abundant and where we could get fuel for a fire. A couple of armfuls of dry grass made a fairly warm bed. The night was clear and the temperature went down near 20 degrees F. I did not sleep much but lay watching the exceptional beautiful auoras.

Fri. Oct. 15 - Started out at day-break at 6 o'clock and arrived at the camp at 9 a.m. Rested most of that day. Our cabin has been finished some time ago and is about 15x12 ft. one room.

Sat. Oct. 16 - Went over to the big lakes west of the river. The lakes are partly frozen over. We travelled about 15 miles around the lake and collected aquatic plants. Took a few photos. Made a bookshelf and a dark room lamp in the evening. Bob had during my absence covered a lot of ground in the vicinity of Candle and Buckland camp and had made extensive collections on both places. Most of these represents the type of summer range plants. Besides he had started on a Greenland sled.

Sun. Oct. 17 - Went over to the lake again and skated a couple of hours. Started on the plant collection from this summer.

Mon. Oct. 18 - Went up to the string of lakes to the north west of the camp. Made a couple of photos of some ground ice formations showing how the deterioration of the ice probably starts as the typical polygonal fissures and by and by by thawing ends in changing the topography by opening up into lakes. Bob got started on my sled.

Tues. Oct. 19 - We continued on the collections. The plants are sorted out and each specimen placed on a sheet. They are identified and systematically arranged. The sheets are numbered and the number and name listed in a catalogue.

Wed. Oct. 20 - Same. Started raining.

Thur. Oct.. 21 - same. Rain.

Fri. Oct.. 22 - Same. Rain.

Sat. Oct. 23 - Snow.

Tue. Oct. 26 - Finished the collection, our material from Diomede Isl. still remains in Candle and couldn't be taken in. Our catalogues so far enumerates 465 species in 1620 numbers represented by 4700 specimens. Bob continued on my sled. Started on a card index of the collection. Mr. Johnston and Bob are going to Candle in a couple of days, the latter to get four dogs from there and if possible to take some of the baggage back.

Fri. Oct. 29 - Finished index. Wrote letters. Mail leaves Kotzebue for Nome and outside on November 1st. Copied a report on lichens. Went out skiing in the afternoon.

Sat. Oct. 30 - Temperature dropping to 2 degrees F. this morning. Mr. Johnston left at 7.30 and Bob with a hired native team half an hour later. Started making handlebars for my sled out of hickory.

Sun. Oct. 31 - Finished handlebars - 5 degrees F. Printed and developed films.

Mon. Nov. 1 - Made crossboards for my sled. During the day the temperature

rose to plus two and it started snowing a little at night. Later temperature rose to 34-37 degrees F. Rain.

Tues. Nov. 2 - Lashed my sled together. Still raining. Worked up notes on reindeer.

Wed. Nov. 3 - Same. Mr. Johnston came back alone. Bob wanted to wait for the mail from Nome.

Thurs. Nov. 4 - Oiled my sled. Wrote. Took out a duplicate set of plants for the Biological Station in Fairbanks. Started on a critical revision of some of our more doubtful identifications.

Fri. Nov. 5 - Same. Temperature around freezing point.

Sat. Nov. 6 - Bob came at 9 p.m. with the largest part of the baggage. 11 hours from Candle. I have now gone through that part of the collection where revision is most needed. Through Mr. Johnston we have now had made sleeping bags and parkees of reindeer skin.

Sun. Nov. 7 - Started on the Diomede collection brought over yesterday. Repaired dog harness.

Mon. Nov. 8 - Finished Diomede collection and intercalated it in the index. Bob started on his sled again.

Tues. Nov. 9 - Made notes on reindeer. Copied several reports and M.SS's borrowed from the Bureau of Biological Survey. Went out with the dogs.

Wed. Nov. 10 - Mr. Johnston went to Candle. Went out with the dogs with Bob. - - - - Went up to some ground ice exposure up on the river. Developed some films of Candle Creek and some plates from today.

Thurs. Nov.11 - Bob made sled. Isik came back from the Napaktolik corral. Went out with the dogs alone. Started on expense account~~s~~. Wrote out plant catalogue.

Fri. Nov. 12 - Mr. Johnston back. Went about two miles on the Candle trail with the dogs. Finished catalogue. Bob worked on sled.

Sat. Nov. 13 - Took the dogs out. Went down to the Candle portage. We drive the dogs in fan shape in Greenland fashion. At first they simply refused to work that way but are getting used to it by and by. Typed the expense account. 10 sheets! - Bob painted his sled and made cross boards.

Sun. Nov. 14 - Practised with my new Winchester 30-30. It shoots straight enough but much too low. I shall have to file the front sight~~s~~ down about 1/16". Bob made Greenland style dog harness from an ugruk skin. We have now nine dogs and they are improving all the time. Wrote some letters and started on a report on this summer's doings. Bad job I'm afraid. Our proceedings create~~s~~ great sensations and we have frequently "savage" visitors to inspect our curious things and doings. All the natives of this generation have adopted the Nome sled and most of the whiteman's "improvements" on harness and other things. The elder generation still know~~s~~ about the old style and are not so sceptical about our ways. The Nome "collar" harness I believe is alright for a dog team travelling on a beaten trail but on a rough trail I shall always prefer the native harness. An inch of snow during the day.

Mon. Nov. 15 - Took the eight dogs out and made a trip down river. More improving. It doesn't look so bad now and we hope to carry the experiment through successfully. No ice in the bay yet. I want to go to Kotzebue to get another dog team and to wire Ottawa for more money. We have about $1100. left but I'm afraid we shall need about $1000 more placed to our credit at Nome to meet all eventualities that may come up. I hate to ask for more but I can see no way out of it and would hate even more to get stuck because of lack of funds. Our botanical collections are ready now to be packed and shipped. We shall have to mail them to Nome where the Lomen Co. will pack and ship them next summer as express goods. I hope to get through all indoor work this week and would like to do some more field work before the days get too short. But all this clerical work has to be done anyhow so I'll just as well be through with it as soon as possible. and as long as there hardly is any ice or snow travelling is bad anyway.

Tues. Nov. 16 - Worked on a report of our work in Alaska. Bob painted his sled.

Wed. Nov. 17 - Bob went down to Igloo Point on skates to get some reindeer horn for dog harness. Took the dogs out to Candle portage. Probably owing to the mild weather they were crazy and I had all kinds of fun before I got started. Had Isik up to the cabin to visit and obtained by and by a good deal of information during a regular three hours interview. Made up and re-wrote my notes after he left. Bob back from Igloo Point at 12 p.m. Going back he had strong headwind. Was pretty tired after the 52 mile trip. Johnston went to Candle expects to return tomorrow.

Thurs. Nov. 18 - Mild and windy. Worked on reports, expense accounts, etc. I'm getting disgusted with this red tape work and long to go out in the field again. No chance to go to Kotzebue for a long time with this weather. Johnston back at 1 p.m. Temperature 30-32 degrees F.

Fri. Nov. 19 - Earlier up than usual on account of the slaughtering to take place on the Alder hills about eight miles south east of the camp. The herders however did not start till after eight and did not have the herd at the place till after noon. Left here on foot after lunch. Followed the long string of lakes to the foothills where we found a bunch of three thousand to four thousand deer. Eight to ten men armed with rifles went in between the deer that are now much more docile than in the summer time. Each man looked around for his own deer or deer belonging to someone that he represented and finally when in favourable position shot it. They can easily get within ten to fifteen yards range and almost invariably killed the deer instantaneously by breaking the neck. About 25 steers were killed. They were all almost overfat like a stable-fed animal. Have lost most of the beautiful slenderness and grace of the wild caribou. Especially the steers when they waddle. I beleive they will weigh close to 300 lbs if not more. A broken sled deer and three wild steers to become sled deer were lassoed and tied up to a niggerhead. . The former behaved themselves and were content to be photographed while the wild ones had the horns sawed off and were very wild and tried to break the ropes that had been connected with a piece of reindeer skin straps tied around the crown. Returned at dusk and were back in camp at dinner time after about fifteen miles of brisk walking.

Sat. Nov. 20 - Strong southerly wind. Bob started out with the dogs for Candle to bring over the rest of our stuff left there and to see if the dogs are strong enough to make the trip to Kotzebue. Went over to the herd again with Mr. Johnston. We made the trip this time with his dogs and had a pleasant and fast trip. The light was very poor and I expect to get anything on the dozen pictures I took. Temperatur 22-20 F.

Sun. Nov. 21 - Fine day. Made photographs of dog and reindeer sleds. One of

Amundsen's Siberian sleds has been bought by the Company. Tried it yesterday with Johnston. It distinguishes itself by being more limber than any other sled I have tried. All joints are made without any kind of nails and are kept togethe with rawhide lashings. The runners are about four inches wide and of hardwood without any metal shoeing. It is a good sled for use in the interior especially niggerhead tundra. But for ice - as Amundsen intended to use it, it is said I cannot find any use for it.

Two Alaska sleds - a freighter and a light runabout were also photographed. Wrote in the afternoon and developed my films from the two trips to the reindeer herd and the sled pictures in the evening. They all came out better than I expected, but were, of course as one would expect somewhat flat owing to the poor light. Temperature dropping all day and before I turned in I re plus 5 degrees F. The glass has for a long time been exceptional high 30.8 is going down to but very slowly. Johnston is going to Igloo Point and all the boys to the Napaktolik corral beyond the mountains to the east so I shall be all alone tomorrow.

Mon. Nov. 22 - Wrote a couple of letters and made a catalogue of my films for this summer. Numbered the film on the typewriter. Bob arrived here about 6 p.m. after a 8-hour trip. He had a fairly good load about 300 lbs and had had a hard trip. Still no snow on the other side of the divide. He left the dog we bought from Porkypile because it has some kind of skin disease. He brought the lichen collection from Diomede Island, two boxes of fresh fruit that I brought from Nome and a number of odd pieces. In the lichen box were 4x12 films from Diomede. Developed in the evening. All of them very good. Many real good and interesting pictures of birds, plants, etc. Did not get through till 3 a.m.

Tues. Nov. 23 - Put the rest of the film from Diomede into the catalogue now numbering 213 negatives. Made preparations for a trip to Kotzebue where we shall try to get another team of dogs. I shall also have to ask for $1000 more advanced to meet unexpected expenses. I hate to do this but in my estimation of the cost of this trip I did not figure on more than one team and now we see that with the bulky and heavy baggage we have to transport we cannot get along at a reasonable speed with less than two teams. The money should be deposited in Nome Miners and Merchants Bank. Before leaving Barrow I can make arrangements to have the Bank return the balance left unused. If nothing unexpected happens the whole amount will be unused. Temp. dropped to plus 1 degree F at night. 4-8° in dayti Barometer still very high and steady.

Wed. Nov. 24 - Dogs still too sore-footed so we decided not to go today. Made different odd things for the trip. Wrote some letters. Mercury still lower - 4 degrees F. Everything ready for an early start.

Thurs. Nov. 25 - Weather exceptionally fine and calm. Up at 6 and left at 8 at daybreak. No snow on the river at all. I ran ahead of the dogs on skates. We had borrowed a small basket sled for me to go back on and had a fairly bulky load probably close to 300 lbs. We plan on short runs because the dogs are still soft and do not expect to make Kotzebue in less than three days. We had for the first time the other dog that we bought from Nellina two weeks ago. He had a bad toe then and has been nursed since purchased. He proved to be fine and pulled fine all day. We had only 7 dogs. Curly the other Nellina dog is lame and Brown was left in Candle because of skin disease. Arrived at Igloo Point 12.30 and stopped as the dogs get sore feet from the hard ice. Temp. 6 deg. F. at start. Had to break into the cabin as the native had left this morning without leaving the key. Went to the corrals. Tried to take some photos but the shutter proved to be frozen. Took two time exposures of the inside of the corrals. The ground is the common tundra type with ice below and was previous to the corral a polygonal fiel

with the ordinary narrow fissures. Due to the trampling of the reindeer and artificial erosion has been effected and the fissures opened up and the whole surface shows a beautiful example of the way the ice tundra deteriorates and is cut into blocks when the protective cover of vegetation is removed. In a few years the ice will all have thawed and the ground will again be level and lower than before.

Fri. Nov. 26 - Weather fine and cold. Left Igloo Point 7.30 a.m. and set course W. 20 S for Elephant Pt. Ice very rough and sharp, quite without snow cover. Arrived at Elephant Pt. in 2 hours. Climbed the point to have a look at the ice which was smooth and snowless; as far as I could see there was no open water.

Put on my skates and went ahead of the dogs travelling at a very good clip when we were stopped by thin ice. Numerous seal breathing holes (agdluit) and several holes through which seals had crawled up on the ice (kikuleg) but actuall saw only one seal although later we saw more, without, however attempting to hunt them. The ice was strong enough to support the weight of a man and would probably have been safe for a well-trained dog team. But ours isn't that and besides our load is too heavy so we had to make long detours. To get ashore we actually had to cross a stretch of ice that was definitely not safe.

Arrived at Callahan shelter cabin at 2 p.m. Dogs very tired and their feet sore from the smooth ice. Camped for the night.

Distance travelled was 21 mile but with the many detours the actual distance was probably nearer 30. Travelling on skates without the dogs we could have made the trip from camp in one day.

Sat. Nov. 27 - Weather fine and cold. Up at 4 a.m. but since we were only going as far as Arctic Circle Cabin we took our Time and did not start until 7.30. Portage 4 miles but owing to the total lack of snow it was a tough job to get the sledge across.

Reached the ice on Kobuk Lake at 9.15. Here there were a few snow drifts on the ice but were able to skate. We had been told that there was a shelter cabin at the narrowest part of the peninsula where there was a fence across. The bank was high and difficult, so I walked across but found only remains of a shack with no stove, door or windows. Next cabin is some 30 miles up the lake. It was 9 p.m. before we arrived there. Dogs very tired.

Sun. Nov. 28 - Started at 1 p.m., arriving at Kotzebue at 2.30, stopping at Tom Barrowman's roadhouse.

Mon. Nov. 29 - Saw several people about dogs but none seem to be available. Five were offered from 2 different teams, but, not very good. Wired Ottawa for more funds and wired the bank in Nome to let me know when the money arrived. Had our first feed of muktoq and seal meat. Temperature 4 below with wind from East.

Tue. Nov. 30 - Looked at some dogs but saw no good ones and chances of getting a team here are very poor, indeed. Plan to go up the Noataq tomorrow where I ~~was~~ am told that a white man Leo Wheeler is said to have good dogs that he may wish to sell.

Wed. Dec. 1 - Weather fine and cold. Wired Johnston asking if he would accept $300 for his team of seven dogs. Received a message from Mr. Palmer about Twitchell on the Kuskowin who wants to sell 2000 reindeer. Kind of funny. Would rather have somebody offer me some dogs for sale. Left here at 10 a.m. Had a miserable start and had to get on the skates before the dogs would make any headway. Found the cabin at 1.30. He was not at home but came an hour later. He has a fine team and is not unwilling to sell. Price high.

Thurs. Dec. 2 - Went out with Wheeler and his team. Pretty country. Went about fifteen miles over all kinds of trail. The team will be fine for us. Saw a lot of muskrat houses, etc.

Fri. Dec. 3 - Took the team about ten miles up the river alone. Had no trouble to make them go the way I wanted. Decided to buy. The timber goes right to the mouth of this river and even a few miles from the sea we saw several sticks as much as 6" thick. The timber gets thick about twenty miles up stream and a few miles further up is said to be 18" stuff. Wheeler is a whiteman married to a woman from Port Hope. There are six or seven children all well brought up and all of them speak English better than native. He is living on trapping and is an interesting and not common type in this country. He started in the big rush as a kid of eighteen and has not been outside since. Has evidently been through a better education than most of the Alaskans. He ~~has naturally a~~ is keenly interested in natural history. During the days we spent with the family we lived as they do to a large extent on the resources of the country. We had e.g., one dish I never had before i.e., the roots of Hedysarum. - . Some kind of mice cachethese in quantities for winter use and they are easily gathered in places where the mice are numerous. The taste is similar to sweet potato and the natives name is mashoo. Further we had turnips grown on the Noataq.

Sat. Dec. 4 - Went back to Kotzebue with both teams hitched up together. Received a wire from Nome Bank that the $1000 had been wired already and another from Mr. Johnston to the effect that he would not sell.

Sun. Dec. 5 - Tried two dogs and bought them as they proved to be good. Had a set of towlines etc. made for my team yesterday. Bob decided to give up driving Greenland style and made a towline set for his team. Packed and got ready for an early start tomorrow.

Mon. Dec. 6 - Left Kotzebue at 9.30 and stopped at Cape Blossom Cabin twenty-two miles south of Kotzebue.

Tues. Dec. 7 - Started at daybreak and followed the beach down to Peninsula. Here it started snowing. Continued to Callahan's cabin where we arrived at 5.30 p.m. after a run of some forty miles. Snowing hard with a little wind. Not cold.

Wed. Dec. 8 - Still snowing, snow very soft and in the drifts a foot deep or more. Started before daybreak and set course magnetic S.E. for Elephant Point Hit it at the very point after 2½ hours. Changed the course to East five degrees North and arrived at Igloo Point before dark. Stopped here at the Lomen Cabin.

Thurs. Dec. 9 - Started at 8. Still dark. Snow bad and ice very slippery below on the river ice. The dogs get very tired from slipping back and constantly get ice in their feet. I had to stop and remove the ice every ten minutes, on the leader. He is a fine little dog and I think he is well worth the $100 I paid for him. He is well broken in and goes "Djee and haa" and "come Djee and come haa very nicely. One cut his left hindfoot on a broken flask in Kotzebue and does not pull well but all the rest of them are o.k. Arrived at the camp 1.30 p.m. Johnston came back yesterday only and had spent a week in Candle. Isik is still at Nabektolik but is expected back soon. Distance close to 300 miles.

Fri. Dec. 10 - Cleared up the house. Bob packed the vascular plants into ten big parcels. I wrote some letters and packed, numbered and labelled the big collection of lichens from the Diomede Island.

Sat. Dec. 11 - Went down to the first slough and took back a big load of wood. No fuel except wood is used in this place. Mostly green alder and willows. The natives even cut it from time to time and no woodpile ever gets time to dry before

used. The spruce timber is about sixty miles up the river and supplies material for the cabins and some wood. But labor is so high that it sometimes will pay to ship lumber in. Started making a bicycle wheel that I got in Nome into a sled speedometer. I could not get a front wheel so I have here an old type rear wheel that causes me some trouble with the brakes, friction clutches, etc. Developed some film in the evening and printed some pictures. Johnston went to Candle.

Sun. Dec. 12 - Assembled the speedometer and mounted the cyclometer in it. Johnston came back in the afternoon. Wrote final reports on our work and on the Statements of Disbursements prepared for the Department.

Mon. Dec. 13 - Bob put canvas on the parcels with herbarium specimens. Settled our account with the company and typed the bills. Wrote some letters and prepared some of the baggage for the final packing up.

Tues. Dec. 14 - It is getting cold now in the afternoon the mercury dropped from 20-22 degrees F and it will be colder tonight. Finished the speedometer. Went for a short trip up the creek to the east. Took skiis but going is bad. Snow is too cold and makes much resistance.

Wed. Dec. 15 - Cold - 28° F. Wrote final reports, letters, private and on busines Packed some stuff.

Thurs. Dec. 16 - We have fixed the start to Sunday and hope to get through with the packing etc. Wrote letters etc. 41° F. Took some photographs at night by moon and flashlight. Developed. Went down on the Candle trail to try out the speedomete I made the other day. 14 miles. It works fine. Took a load of wood back.

Fri. Dec. 17 - The whole Buckland valley is hazy or smoky from the vapor fro the many wood burning smokestacks. Perfectly calm. 43° in the morning but during day the temp. rose when a breeze came up and was 30° F at night. We packed and wro letters.

Sat. Dec. 18 - Packed the last. I take the mail to Candle where I have some bill to pay and shall finish my expense account. We go to Kewalik and take the mail up from there because it is easier to start from there. If weather keeps up we may make Kotzebue before Xmas. 43° in the morning. 45° at 8 p.m. We experimented yesterday with frozen mercury. Put a set of brakes on my sled and gave it a final overhaul.

Sun. Dec. 19 - Temp. 45° F. Up early and made ready for the start. Heavy loads as we are taking about 300 lbs of mail besides our baggage. All equipment that we do not need on the trail is shipped as mail to Aklavik and the rest being specim to be sent to Ottawa. I had on my sled over 450 lbs. Left the camp at 8.30. Duck Creek 11.40. Waited here three-quarters of an hour without seeing Bob so I left. Arrived at Kewalik at 2.20. Odometer showed 22 miles. Bought sealskin with blubber on and some dried salmon. Bob pulled in after five. We go to Candle tomorrow. Temp. here 30° F. Full moon.

Mon. Dec. 20 - Snow and westerly winds. Started at 9 and arrived at Candle at 10.30. The meter only showed 7^{8} miles against the official measuring by the Road Commission of 9. Drove up to the post office and delivered all the parcels. Closed my account with the local trader Robinson and Greenberg and finished my expense account. To be sure of my totals I checked them up on the traders adding machine. The outside mail was expected today but did not come. I wish I could get it before I leave tomorrow but its got to make 30 miles from Quartz Creek and will probably not be in till late. Minus 5° this morning colder and partly clear in the evening. I almost got in trouble with my dogs, when I was unhitching them they saw four loose

them and only four for the sled. Still it was all I could do to stop them by pulling down on the brake with all my force.

Tues. Dec. 21 - Delivered the mail and helped the postmaster to fix it up which took us nearly three hours. Postage totalled $40. To have it out in the first two mails it was necessary to insure all. Bought equipment and some groceries and left for Kewalik in the evening. We bought two dogs from Tieplemann and traded the dog that has all his feet cut. Bob got the two dogs and we have thus 9 apiece. Temp. 32° F. below.

Wed. Dec. 22 - Started a little before daybreak. Odometer showed 44 miles. Ice very fine and level but snow salty and the sleds pulled very heavy and we only made four miles an hour. Stopped at Choris at 1.30. Cold breeze north eastern - 34° F. Odometer read 63. Distance 19 miles official distance 23.

Thurs. Dec. 23 - Distance Arctic Circle Cabin 11 miles - Lapp Cabin 16 miles - Hily Wreck 30 miles - Meter 92. Wind cold from north east froze my face a couple of times. Time from Choris 7½ hours. Started blowing harder in the evening.

Fri. Dec. 24 - Left the cabin at 8.30. Snowstorm from east got a little better after and we crossed the portage behind Cape Blossom. Not too cold either. In Kotzebue 12 o'clock. Distance 18 miles, Meter 111. Pulled up at the roadhouse. There was a couple of telegrams waiting for me. One from Mr. Finnie advising that the $1000 had been wired to Nome and ordering me to send in expense account as I have already done. He wants me to wire immediately if I have any message to Godhavn as he is going to wire on Xmas Day. His telegram is two weeks old now so it is too late. I sent a message in the last mail direct to K.D.K.A. Despatched a wire to him telling about our movements and plans. Went up to the Xmas service in the church but found it an examination of the native school children more than anything else and left early as I had a lot of things to do because I plan to leave again tomorrow for the Noataq.

Sat. Dec. 25 - Sent two wires to the Lomen Company, one instructions for the shipping of the specimens mailed from Candle, the other one an order for reindeer skins to be shipped to Herschel Island next summer on the first boat. Bought a grubstake for a six-days trip on the Noataq River when I planned to go up with Wheeler. Snowstorm from North east but not cold. Left at noon and came to Wheeler's camp at 2.30. Meter 125 miles, distance 14 miles. My brother stayed behind.

Sun. Dec. 26 - Wheeler's team is not back yet. Went out hunting rabbits but we only got one. Cold again. Weather fine. Repaired a little on the Odometer. Wheeler's boy came back with a load of fuel and goes back to Kotzebue to bring the family.

Mon.. Dec. 27 - We went out together looking for rabbits and attending to the trap lines. Besides the roots of Hedysarum gathered from the mice, Wheeler showed me today that the mice also gather the tuberous roots of an Equisetum probably arvense or silvaticum. He has a big cache and we had some dish of this fine Hedysarum roots. Tastes like sweet potato. The natives call them "Mashoo". Equisetum roots are edible but too small to amount to anything.

Tues.Dec. 28 - Fixed my skiis to fit on the soft mukloks and made a few,repairs on my sled. Took a trip out on skiis to try the effect on the soft boots. It was of course not quite as good as with a leather shoe but could be used without difficulties. We start out tomorrow. Wheeler and I plan to go to the biggest timber on the lower Noataq. The trip will probably take four to five days. We shall thus probably not be ready to start on the 1st from Kotzebue but I believe that even if we do not get the benefit of the mail

two than with three teams and shall have better light too.

Wed. Dec. 29 - Cold, overslept and did not start till about noon. We had Wheeler's team and the big canvas covered housesled. We followed the Noataq about six miles and cut across a portage about as long and finally before coming down on the river again turned to the right and went up a small creek leading up to hills behind which some of the best timber in the country is to be found. I travelled on skiis while Wheeler took the sled. We camped about 4 p.m. a little after dark at the head of the creek a distance probably of fifteen miles.

Thurs. Dec. 30 - Not so cold. A little snow has fallen in the early morning. Started out on skiis with Wheeler after daybreak. Followed creek up through the timber and soon reached the timber line. Timber from 8-12" in diameter plentiful here and several measured ~~as high as~~ 18" ~~were measured~~, all two feet above the ground. The highest were roughly measured to 50-60 feet. Remarkable is the distinct timber line. The grade is not steeper than we could go up on skiis and still the biggest spruce measured were growing not fifty feet below the last stunted one. Lots of exposed rock. Probably some metamorphosed kind of lime stone. Snow was deep nowhere and several plants were noticed. Hedysarum species ("muschu") (probably the tall pink one) Zygadenus elegans, Boykinia species remarkably common in the timber. A few Bosniackia, the blue tall forget-me-not above timber. Androsa~~se~~ce Chamaejasme and septentrionalis, Saxifraga oppositifolia, common above timber, also here Cass-tetr. Rhododendron lapponicum. In timber Parrya nudicaule, alnus species, the scented willow is very common on this river. I was surprised not to see a single chunk of reindeer moss. Probably the limestone is not good for Cladonia. Wheeler claims that good moss is found in this vicinity. Reindeer had been in this timber not long ago but evidently did not stay long. The most common lichen I believe is a light yellow Xanthoria growing on the cliffs. Bark lichens mostly Usnea and Cetraria of course also are exceedingly common on the spruce. Elevation of the timber line probably not over 1000 feet. Highest peaks behind probably 2000 to 2500 feet. Almost devoid of vegetation a little above timber. Rapid disintegration. Back to camp at 3 p.m. Distance about six miles. Cold at night again.

Fri. Dec. 31 - Broke camp and went down the creek to the main river, camped on the river before dark. Went out at midnight and celebrated New Year's Eve by burning a dozen of big dry spruce trees. It was calm and the flames and sparks went almost a hundred feet in the air.

Sat. Jan. 1 - Cold and hazy. Went down river and followed Wheeler's trap line across country. He got one fox. Going bad, thick willows and big niggerheads and loose snow. Back to the cabin at 3 p.m. we have on this trip used Wheeler's housesled and I am very much surprised over the comfort reached at in this simple way. The sled is an ordinary 27" sled with a 34" by $9\frac{1}{2}$' cigar-shaped tent on top. The frame is very light and covered by 10 oz. canvas. A door on the side and another one in the rear. A light camp stove heats the room in five minutes and takes but very little wood. This sled leaves ample room for two men but some baggage and dog feed has to be taken out at night. The great advantage is in having your camp right with you when you need it all the time. No pitching tent or building snowhouses. When wood can be obtained you can get warm and comfortable in five or ten minutes and can get your clothes dried. Of course the heat does not stay after the fire is gone, but fifteen pounds of good wood is enough to keep the stove going for three hours. I am inclined to make my sled into a housesled for this trip. The whole tent rig would hardly exceed 30 lbs and would even on this coast where shelter cabins and igloos are abundant, be a fine thing.

across the flats to a native eight miles to the east. I want to supplement my team with two more dogs and can probably get them easier around here. The native - Murphy had no dogs to dispose of while his mother-in-law had one, a big Malemute, probably larger than any other in the team. He was five years old so I am not too anxious to get him but arranged to try him out to Kotzebue before making any deal. Going back the dog pulled fairly good but is a little lame in left foreleg.

Mon. Jan. 3 - Broke up from Koataq and started back to Kotzebue where I am going to build a top for my sled. Cold wind from the east with snow. Made arrangements with a native carpenter to have him help me tomorrow. Telegram from Lomen Co., in answer to my wire of the 26th last. Received mail from outside and wire from home, but no mail from Ottawa.

Tues. Jan. 4 - Made most of the framework of the top. Blizzard from the east. The temperature is about zero.

Wed. Jan. 5 - Finished the frame and had the canvas cover sewed and am ready to nail it on tomorrow. Bob started to make one for his sled too. Snowstorm and mild weather.

Thurs. Jan. 6 - Blizzard. Springtide. In the middle of the Bay the sea ice is frozen to the bottom and is now all flooded so we cannot get across till after the wet snow freezes solid. Put canvas cover and bottom on my sled.

Fri. Jan. 7 - Wind changed to west, snowing hard. The trail will be bad after this if the wind does not blow the snow off. Finished my house sled. All I need now is a stove. The sled is all covered. Has a tunnel door in the rear and one on the left side towards the bow, where the stove is to be placed. The increase in weight is not over 30 lbs. I believe with the stove in the sled it should not come over 150 lbs. Went to a sing-song evening in the Government school. Everybody joined. There were several good voices but the general effect wasn't too good. But the natives seemed to enjoy it immensely. I left soon but the singing continued a couple of hours after I left. Funny they never learn them anything but hymns and religious songs. I'm getting tired of Kotzebue and wish we could get away soon. Wired the Lomen Co. about a statement of $14.45 received in last mail and wrote Ottawa about a shipment of reindeer-skins to be paid for through the office.

Sat. Jan. 8 - Blizzard from West, snowfall too. Got a stove made of light sheet iron and fixed it in the front of the sled. Bob is getting his sled finished too.

Sun. Jan. 9 - Went out four miles and back to take a look and to try how the sled worked. The wind has changed to east again and the barometer rose one inch last night. It was blowing stiff but the wind did not bother the sled much. The sled is alright so far. Put in a few improvements in the evening. Snow still soft.

Mon. Jan. 10 - Blowing hard from east. Mild. Ten above zero. Went out in the morning to try two dogs that I contemplate buying. One is not worth much because the hind feet are in bad shape. B~~r~~ought them both for $40.00 and think I will trade the one that has poor feet. Otherwise fine looking very big dogs. Made ready for start tomorrow. Settled with the traders and the carpenter and tinsmith. The $1000 are already nearly finished and we shall have to cut our expenses down. Winter travelling in this country runs into money. Dog feed alone even here where fish is "cheap" - 8¢ - runs into $3.00 or $4.00 a day.

Tues. Jan. 11 - Blowing hard. Temperature about freezing point, snow drifting and sloppy. Disagreeable weather. Wind east so it will help us some. Left Kotzebue at 10.30 a.m. Odometer 136.6. Load between three and four hundred lbs netto or over 700 lbs brutto. I drive twelve dogs now which is one too many. The school teacher from Kivalina with family is going same way. I offered to take the family,

mother and two children - in my sled, if somebody would take my baggage but was refused. I overtook them on the other side bay - 8½ miles and took the lead. Travelled on lagoons and beach. Some places too much snow and some places fair. My sled is top heavy and turned over once and the grub-box contents was scattered all over the sled. Charley Allen's cabin reached at 5 p.m. Odometer 161. Distanc about 25 miles. Camped under a bluff. The sled is too small for a tent but otherwise comfortable when inside except for the snow that makes everything nasty and wet.

Wed. Jan. 12 - Same as yesterday, only wind at times stronger. Started at 9.30. The rocky promontory before Cape Krustenstern seven miles. The wind was so strong that we dared not travel on the clear ice of the lagoon and had to crawl around along the snowbank edges. At the promontory the bank was very rocky and we had a hard time in getting the heavy sleds across the bare rocks. Then came the six-mil portage. It was even worse. Big niggerheads with lots of loose snow between. My little leader got tired of fighting the niggerheads and I let the school teacher take the lead for a couple of miles. After the portage we had some fairly good beach travelling.

A.R.C. Shelter Cabin at 8 p.m. 31½ miles. Odometer 192.7. The dog I bought in Kotzebue with the bum feet soon played out. I let him loose. He has not come in yet will probably go back to Kotzebue. The other one, his brother is a fine dog. The wind died away in the evening. Yesterday I noticed the scente willow in a few places. Saxifr. tricusp and Statice sib. is getting common on dunes. Today I saw Myriophyl ? alternifol,Callitriche hamulata? and Potamogeton filif? in some lakes. Alnus grows in a few places and once I had to chop trail for a short distance. Characteristic is Carex Gmelini on the beach and C. stylosa in the tundra. C. magellanica is common and same is Luzula nivalis. Elymus still abundant but low ? Heleocharis growing in masses on the bank of a lake.

Thurs. Jan. 13 - Fine day with a moderate temperature. Started at 8.50 and had fairly good travelling along the beach. Kiwalina at 3 p.m. Odometer 216.7. Distance 27 miles. Total distance from Kotzebue 81½ miles. The A.R. Commission distance tablet gives 84 as measured by Ross Kinnie last year. Potamogeton filiformis abundant in small lagoons near the village. Saw a white owl on a pole and tried to get a shot at her. We were invited to stop at the school and were glad to change our sled for a living room. Our fish cache was in good condition and the fish were o.k.

Fri. Jan. 14 - Weather fine for travelling but as Bob's dogs were rather tired we decided to give the dogs a day's rest. We used the day to overhaul the sleds. Mine had hit a rock down at Krustenstern and all the crossboards were cut half through by the heavy sled dragging over a sharp point. That red cedar is too soft for this purpose. Open water is reported at Cape Thompson so we shall probab have to go over the mountain. Still the Tempr. has dropped to about 30 below, I believe, so there may be new ice formed by the time we get there. We had a fine meal of mountain sheep a dish we have not tried before.

Sat. Jan. 15 - Weather fine. Calm and not cold only about zero. Started at 8 a.m. a little before daybreak. Fine travelling along the beach and on a long string of lakes and lagoons. Cape Leppinger that hardly deserves the name of a cape is 15 miles. Next cabin or igloo, uninhabited at the present 25 miles. Lots of fine wood all over. Most of it is cottonwood but also spruce is common. Stopp at one place about 25 miles from Kiwalina but drove on to the last igloo at the beginning of the Cape Thompson portage. Here at 6.30 p.m. The odometer broke down between the last two stops and had to be repaired. Showed 251.4 -- 35 miles but the distance Should be 45 according to the time.

Sun. Jan. 16 -

a creek. Four miles up the trail turns to the left and the hills are ascended. The grade is not bad and the trail avoids any steep grade and thereby becomes unnecessarily long. On top we struck hard going for the dogs. Some time in the fall a cover of sleet has encased the grass straws and made every little leaf of grass left to an icicle protruding from the ground. The divide is near the north side and is only 850 feet above sea level. The whole distance is 14 miles but took us 4½ hours. Here, as well as other times, I am wondering why they put so many stakes in. The stakes are 5'x2"x4" and are sometimes not more than 70' apart. They are not deep enough in the ground and two had already fallen though the trail had been staked this fall. We stopped one hour and made coffee at an igloo. The inhabitants of which had temporarily left. Two miles further were several igloos and we were forced to stop for another hour. We found that a man by the name of "Pete" had our fish cache in Point Hope. The question of how he was going to get paid worried him a great deal so he decided to go down to Point Hope tomorrow to collect for the storage. Several more houses were passed and at 7 I came to the B.E. School at Point Hope. Odometer 288. Distance 36. The teacher told me that he was sorry that he was not fixed to receive travellers but I could sleep on the floor in the schoolroom if I wanted to. In Nome the Judge had given me an introduction to the mission and told me to stop there so I thought I would rather not bother the teacher and drove on about one mile to the site of the mission. I was asked in and had a cigarette and conversed for about an hour. Then the Reverend Goodman of the Episcopal Church suggested that we go down in the village. Several of the igloos were pretty good. "No", I said, "that is hardly necessary since we got our sled outside when we use to sleep". Finally the good man offered a floor to sleep on and we had a dish of tomato soup and some crackers each for our supper exactly 14 hours after we had our last meal on the other side of the Cape. When our host had gone to bed I went out in my sled and had a hearty meal of quag (frozen meat) and then went to bed in my sleeping bag on his office floor. Weather fine all day. Calm and only a few degrees below.

Mon. Jan. 17 - Weather fine and calm as yesterday. We rested the dogs and I fixed my runners where some nails had come out. Made arrangements to have a native follow us to Corwin Coal Mine three short days run. He is to take a load of 400 lbs. of dog feed at a rate of 6 cents a pound, dog feed and grub furnished. We had 600 lbs of fish cached here and would only use 300 for the trip to Wainwright where meat cache is. I tried to dispose of the surplus 3 bundles - 150 lbs but nobody was anxious to buy so I gave it to our host. We were invited to a native dance down in the village and spent a couple of hours there. The champion of this coast gave the first part and was followed by another man and two women. There were four drummers with fine big drums. The three first dances conveyed no meaning to me at all while the last one was about whaling from the ice. It is a curious custom that the men have to wear gloves while they dance. The women dance without and were silent and danced with closed eyes. The dance stopped at 10.30 and was followed by a prayer joined by everybody in the house. Our host the Archdeacon attended the dance. The mailman came in after having brought the south mail to Kupowruk.

Tues. Jan. 18 - Up at 6 a.m. but our host insisted on keeping his daily routine so we were late in getting started and did not leave till 9 a.m. I have been hungry since I came in and long to get on the trail again. I believe that next time I shall camp out sooner than bother one of the missionaries again. The first thirteen miles we travelled on the lagoon. Then came the portage. The meter showed 10 miles to Capt. Tuckfield's cabin that we passed up. A.R.C. gives 12 miles. The portage that is a shortcut behind Cape Lisburne is a low valley with excellent going. The first sixteen miles has been staked this summer. At the end of the stakes we found a shelter cabin, but it was nearly full of snow so we preferred to stay out. We had no wood and had to pick up willows. Meter showed 398 miles. Distance 30 miles. A.R.C. distance 33. Calm and mild during day.

At night a wind sprung up. Barometer at 8.30 was 29.4°. The vegetation has changed entirely and is now more of the Greenland type that we have seen before. Saussurea is very characteristic. The willows are the scented species with the long woolly shoots about three to seven feet high. No ptarmigan or sparrows here. Only life I have seen in this valley was a mouse and a snowy owl and two stray reindeer.

Wed. Jan. 19 - Cloudy and mild. Started at 9.30. Met a dog team near the divide which is nineteen miles from the southern end of portage. Elevation 1100 feet. The grade is everywhere low and there are no difficult places nor any rocks above the snow. The topography is so that there hardly ever will be loose snow for any length of time. Down on the north side at 2.p.m. 19 miles from the cabin. Portage thus 35 miles. Stopped one hour at an igdlo and boiled the kettle. (Ajagutaq). Stopped for the night at Corwin's Coal Mine cabin. The smokestack was on the bum so we stayed out in the sleds. Odometer 351. Distance from igdlo 15 miles. A.C.R. same figure. Distance of day 34 miles.

It began snowing at night. Glass 29.9. Saw Eutrema Edwardsii on the north slope of portage and collected some specimens. Lots of "Mushu" Hedysarum species. Straightened up with our hired man who is to return tomorrow. He had given us good help in carrying 366 lbs of our dog feed. Woke up at 2 a.m. blowing hard and snowing.

Thurs. Jan. 20 - Mild (plus 26 F) and overcast with a little off-shore wind. South east. Took the load of fish and divided it between us. I think our teams will have about 1400 lbs gross between them. We have now dog feed for about ten days and grub for about a week. Around Cape Sabine the ice was rough but not very bad. The sleds pulled rather heavy because of the soft weather. Started at 9.30 Stopped and boiled the kettle at an igdlo at Pigmegea River at 1 p.m. Pushed on till 3.40 and camped. The last few miles we had lots of snow. Meter 370.9 - distance 20 miles. Wood is very scarce now and we are using coal in the stoves. I started snowing at night. Barometer 30.05.

Fri. Jan. 21 - Started at 8.45 a.m. A little wind from north. Weather changed to cold. Foggy and hazy because of the cold. Minus 14°F. at noon. Tough going all day. Pressure ridges and young ice. Even the old ice pulls heavy. Rounded Cape Beaufort at 2 p.m. Got a blizzard against. Tempr. dropped to 24 or 30 lower than yesterday. Very disagreeable finally camped at 3. Meter 393.5 or only 23 miles. Glass 30.1. I have managed to keep my sled dry but Bob's where most of the cooking is done is getting wet because firewood is too scarce to heat it sufficiently. It is very hard to dry the kamiks. It is 6 o'clock now and sounds as if the wind is going down. I hope it is or we will be in misery tomorrow.

Sat. Jan. 22 - Blowing as hard as yesterday. All the stuff we had taken out badly filled with snow. Used our last wood in making breakfast. Decided to pull on in hope of finding wood or one of the igdlos given on the map. Twelve to sixteen miles from our camp. Had a hard time in making the leader face the wind. Tried to run ahead myself when the wind was too bad but my top-heavy sled capsized a couple of times with the result that the ashes from the stove got scattered all over the sled and a broken arch in the top. I have not for many years had a so disagreeable day of travelling I remember. Found a wood cache and took some wood. Twelve miles from our camp we found the remains of an igdlo at Omilik. We did not know that the next one about a mile further north was occupied and I have never in my life been so pleasantly surprised as when my dogs and myself at the same time got the scent of the stove. The house was a fairly good sized igdlo pretty crowded but we were received as a white man or in fact any traveller will always be received at an eskimo house. Could not help thinking about the difference between these people and the missionary of our own race at Port Hope who suggested to us to find

people without asking any questions started feeding us. Moved their dogs out of the dog-house to let ours in and were anxious to help us in every way. Meter showed 405 miles so we only made 13 miles today. When I got into the igloo and removed the armour of ice from my face I found that I had several places frozen. When we went to bed at 10 p.m. the wind blew with undiminished force. My dogs are scared to stay down in the dog-house and are most of them around the sled. I have taken the leader into the "torsoq". (front entrance).

Sun. Jan. 23 - Blowing worse than yesterday and it is so beastly cold that it almost takes will-power to get out of the door when you first open it. The dogs are very miserable. We are short of grub and shall have to eat our dog salmon. I do not like the idea of eating off the provisions of our host who generously wants to share with us. We were able to treat the whole house with Maktoq yesterda and made a great hit. We are still 89 miles from nearest store but there are peopl living in four or five places between here and Icy Cape. A party of three white trappers are said to have a cabin a few miles south of Pt. Lay one day from here but as long as this keeps on no travelling is possible. They have no seals or reindeer here. I tried to go out and make a snowhouse for my dogs but had to give it up. The snow is too hard for a saw and besides the wind almost makes sawin impossible. Took the dogs down into the dog-house again but the other team that are all non-castrated dogs and consequently more agressive, drives them out so when I came out later I found them at the sled again. The sled is not tight enough for this snow that drifts in through the smallest holes and I found a big snowdrift covering all the stuff I have left out in the sled. If the wind ever goes down it will take half a day to clear the sled up and get the snow out of the stuff there. In the afternoon when we fed the dogs there was no change in the weather and if anything the snow-drifts reached higher up in the atmosphere than before. The house is a fairly good sized igloo built of sod with an inside panel of cottonwood split poles, I imagine, about 16x12' with an arched roof and the ordinary sealgut window arched upwards by two whalebone strips over cross. A modern coal range tries to keep the place warm but this blizzard is too much for its capacity and we have to wear our fur parkees when it gets too cold. For supper today we treated the house with our mucky dog salmon while the native cooked some rice. Our last piece of moktoq was cleaned up this morning. I have no idea how much grub they hav but the way it looks it cannot be very much, but it does not worry them the least bit. The kettle is boiling from early morning to late in the evening and our coffee I believe is on the last stage too. They tried to have Sunday service but were disappointed that we were not good Christians enough to make it more stylish than they could themselves and the service was reduced to some hymns, some in English and some in Eskimo and a prayer. None of them understand any English at all but all joined heartily in the English hymns that they probably did not understand a word of. This getting monotonous and if I knew how to pray I think I would try if a couple would improve the weather any. We went to bed early and I thought I could hear that the wind was going down at nine or ten p.m.

Mon. Jan. 24 - Our host was up and made coffee at 3.30 a.m. God knows why he does not stay in bed longer as he can do absolutely nothing today. The wind howls in the ventilator worse than ever. I ventured out to the sled and the dogs. They are all out in the storm poor devils and Bob's team are all alone in the dog-house. I wonder what the force of the wind is. I should estimate about 15-18 m.s. To work against the wind you have to stoop and crossing the sastrugi you have to crawl. The thermometer registers minus 33°F. or 36°C. This is the worst blizzard I have ever experienced. In Greenland a blizzard with such a velocity will never be very much below zero, at least not if it lasts for more than one day and now here is a gale blowing on the fourth day with a temperature at minus 33°. I wonder what we should have done if we had not reached this igloo. If not fatal it would certainly have been a most disagreeable experience. I doubt if we could have stood it without serious freezings and certainly not without hellish discomfort. The dogs too would

have suffered more. In our grub box is nothing but half a package of dirty tea about ½ lb biscuit, 2 lbs of reindeer meat and some cans of liver paste, 1 lb of chocolate, ½ lb dried apricots and ½ lb sugar and 1 lb butter. Of course there is no danger of starvation as long as we have the salmon and the people here will share their last bit of food with us. Barometer 29.9 in the morning, at noon 30.2. In the afternoon the velocity of the wind showed signs of decreasing and we had even now and then a gleam of sunshine through the snow that hardly reaches more than 10-12' above the ground. I went out at 1 p.m. to take in dog feed and found it almost calm and started clearing up the inside of my sled. Got everything out and cleaned the snow out. Before I was through however the wind started up again and I had a tiresome job in beating the snow out of my things that in a few minutes got packed with the fine snow particles. The language is causing us some difficulties as none of the people understand English and we have to get along with our Greenland dialect the words of which in most cases are identical with the language of the people here that come from Kiwalina mostly. The difficulties comes in in the talking because the flexion and quite a few if not most of the affixes are different. Further there are some quite striking differences in the pronounciation and the way the sentences are constructed. I have not yet acquired insight enough to be able to put it more exact yet but it seems to me that several of the affixes also have a different meaning so that many roots or stems of words when the affix is put on gives quite another meaning. We used the time here to learn as much as we could pick up. Still I am not very particularly keen to pick up too much of the Alaskan dialects as I will rather for my future work in the Mackenzie have the Greenland dialect only because it will make it easier when I have not too many dialect variations. The people here are very primitive especially some of the older folks while the younger generations are remarkably mixed up. They are of course all good Christians but I doubt much if they "savy" very much. One quality by these people I admire very much - their politeness and courtesy. The first day when they did not know how little we had as well as now when we are poorer than they, we are treated the same viz., as honoured guests.

Tues. Jan. 25 - The wind went down yesterday in the afternoon and we made proceedings for an early start this morning. But the wind has not been exhausted yet. When we woke up it was blowing almost as hard as ever. The glass went down to to 29.9 tempr. last night at 8 p.m. was minus 26°F. I hardly see how anybody could pick up a place like this for permanent inhabitation. Seals are very few but foxes are more plentiful than in other places. While the catch generally has been very poor this year they got ten here six red and four white or about $400. the price being $20. to $30. for reds and about $40. for whites. We are 16 in the house all told and interesting to note how the different people act. The hostess first who hands out the food hardly eats anything herself while the old man and another old man who as far as I can see only lives here to be supported is very watchful that he gets a full share all the time. I have not enough to occupy myself with and you therefore feel more hungry than if you were working. All we can contribute now is fish and a little canned liver paste. The former is in high esteem as the people have no native food at all and Eskimo very soon gets tired of the white man's grub and craves something raw. I should not mind the salmon if they were not so very badly preserved. Some are half rotten and the best are green with mold but not so bad inside.

Wed. Jan. 26 - Wind as before. Feels a little warmer but have not taken the actual temperature yet. This at least may be said for this climate that it is very steady and Archdeacon Stuck is correct in his last book "A Circuit of our Arctic Coast" that the vicinity of Cape Beaufort is a fine place to try out the famous Beaufort wind scale. This book is one of the books I packed and have found a lot of useful information in it about this coast that he circuited about ten years ago. Further I have Steffanson: "My Life with the Eskimo". The more I use that book the more conspicuous to me is the lack of exact information found therein. Lots of details mostly personal but even if the book is more etnological or

anthropological there should be more general information in it. Kleinschmidz: Den grønlandske Ordbog, Ed. 1871 and the new edition by Schultz-Lorentzen 1926; E. de Leffingwell; Canning River, is a wonderful book; The Concise Oxford Dictionary. Some minor papers on Reindeer and other biological papers and finally a bunch of of my notebooks. The rest of my travelling library I sent to Aklavik by mail from Candle. This is late in the afternoon and the wind is still blowing very hard. It has now been blowing like this for six days and there is not the slightest indication that the supply is exhausted. The sky is still clear above the belt of drifting snow below. It has been miserably cold in the house all day as there is no more coal. The best man in the house and Bob brought back a small sledload of wood from the first house we passed when we came here Saturday. We are wearing furs most of the time. My whiskers were getting too long so I tried to shave. My face is peeling all over from frost bites and it was rather a painful operation. Tonight I had the biggest meal since we came here and my appetite was nearly satisfied. We had moldy salmon, a small dish of cooked evaporated apples and three doughnuts fried in seal oil. We now only have a few salmon left for a small feed for the dogs tomorrow. The next igloo is 16 miles from here and the owner is said to have plenty of grub but dog feed they do not know about. Of course if it comes to it we can face the blizzard for sixteen miles but chances are that we should get into serious trouble with our faces. I have spent the day with Leffingwell's report. Temp. minus 25 F at night. We had some eskimo plays and games and our host sang some old songs and made and showed some string figures.

Thurs. Jan. 27 - The blizzard still on. My dogs have now been exposed to this wind and temperature for over a week and for the last days on short rations. Poor brutes they surely look miserable too. I could not sleep last night and recalled the other day when we were in the vicinity of Cape Beaufort - must have been before this blizzard became bad - in a creek or depression as are formed by deterioration of the ground ice along a frost crack or fissure. Here I noticed a bunch of the "Muckplant" the yellow compositae first noted from Candle Creek on Seward Peninsula. Here the ground was covered with snow about four to six inches and the plants that only were about two feet high piercing the snow. What was most interesting to me was the fact that the plants were killed by frost while flowering or just after the flowers were gone and though this season wherever I have inquired, was said to be extraordinary favourable, none of the plants have been able to reproduce. The occurrence therefore entirely corresponds with the notes I have made earlier, viz., that the plant does not belong here. I admit it sounds fantastic to suppose that the seeds have been preserved, in the frozen muck but I cannot at present see any other possible explanation of the occurrence.

I tried to make a snow house for my dogs and made it in the dome shape. The snow however is not very good and is so hard and brittle that sawing is almost impossible if the saw is not absolutely straight. I therefore left it open in top. My big yellow dog "Nep" had managed to untie the front door of my sled and had moved all the load of bags and stuff till he got down to my eiderdown sleeping bag underneath and had made himself comfortable in it. I gave him a good spanking for it only to find him there again an hour later. This time however he had not been able to untie the door so he had torn a hole in the canvas. I had to sew it up and put Mr. Nep on the chain again. The dog is something exceptional on this kind of stunts. If he is chained on an ordinary stake he lifts the chain loop over the stick and I have seen him do that with a five-foot pole. Once at Calahan's this fall I tied the chain loop with a rope only to find that he had chewed the knots over and lifted the chain over so I drove a spike through the top of the pole and made the loop as tight as possible only to find that Mr. Nep was free next morning anyhow. Tonight the dogs had only a quarter salmon each and for supper we had two salmon between sixteen persons. These were the last and I do not know what we will do tomorrow. I have still in reserve on the sled the one lb. of chocolate and 1 lb of butter and a few cans of dry milk. My face is very sore. I had it frozen afresh today building snowshoes. It has become very tender after the Saturday freeze-up. Temp. minus 30° F. at bedtime. Barometer going up

slowly 29.9.

Fri. Jan. 28 - No change. The gale seems to have a tendency to go down in the evening a little and usually at eight or nine p.m. there is hardly any drift while in the morning the vision is obscured along the ground by the snowdrift reaching - seldom over twenty feet. It is curious where that snow comes from for it has not been snowing during this blizzard at all and the surface of the snow is hard as ice except where the fresh deposits are. Here it remains rather soft for a day or two. The Barometer showed 30.1 this morning. I had a good dish of rice mixed with seal oil this morning for breakfast. When a meal is served a wooden platform about two feet high and about two by three feet is placed in the centre of the floor and whatever food is available placed on this "Table". Then the "nigieq" the most important woman, usually the wife of the houseowner says grace. I first thought there was some system but now I am not sure. The first few times our food was served no grace was said. Perhaps we were expected to say it, but later on she says grace before every meal where anything is eaten. No grace is said with coffee or tea. Then she serves out and hands out to everybody. She is a most kind-hearted old lady indeed and many times I have seen her give away of her own ration that always is smaller than the rest. Even now after our contributions have stopped to flow we are always offered more than our share though we refuse every time. She is very fond of cigarettes the same old lady and greatly appreciates her daily cigarette. Fortunately I have lots of tobacco. In port Hope I bought $10.00 of tobacco and chewing gum. Things that are always good for the trail. We have also some cigars and we have been able to give every man a cigar every day after supper. The household consists of: The houseowner and his wife. One married daughter and her husband, the leading man and best hunter and their two children. One unmarried girl of 17 and three adopted children, two boys of about four and twelve and a girl a little older. The big boy and girl are the ones that do~~es~~ most of the work in the house, most like the Greenland form of unpaid servants. The little boy however is a pet and received even more attention than the other kids. He broke his arm some time ago and the married daughter fixed it nicely together with a bandage of stiff corrugated paperboard. I examined the arm and found everything fine. Then there is the brother of the son-in-law and his wife and one little boy and finally an old man and his wife. The latter is very bad with tuberculosis. Their relation to the house is somewhat obscure to me. They come from Point Hope while all the rest are Kivalina people.

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On the 21st - the first day of the blizzard I tried to use my little oil compass for a bearing but only to find it frozen. I have not noticed that before but it seems that it freezes solid when the tempr. gets below minus 20. I have otherwise been very much satisfied with the little compass but freezing at minus 20 of course is a very serious drawback for a compass to be used in the Arctic. When the temperature gets that low it thus becomes necessary to carry the case on the body or have the instrument loose in your pocket.

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Our host cooked some seal blood, blubber and some oats to a thin soup for our dogs tonight. It is almost embarrasing for us to have them even feed our dogs but we are not in a position to refuse. In the afternoon the barometer read 30.2 and ha~~ve~~s thus been rising some since yesterday. In the evening the wind suddenly died and was even reported to blow from the south, but before I got outdoors it had changed back and was blowing pretty stiff from the old direction. Still we all felt sure that a change was near and the rise of 0.4 inch of the barometer pointed in that direction. Tempr. at 9 p.m. minus 30°F. wind about 12-14 m.s. Everybody therefore was in high spirit. The son-in-law Adam Bird wanted to go with us as

and give to him.

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Sat. Jan. 29 - The kettle was boiling at 3 a.m. because of planned early start. It was however kind of discouraging to see how the sealgut window in the roof was moved by the wind and the old tune of the gale blowing in the ventilator did not sound good to me either. At six it blew too fresh for the Eskimos and Bird said "Mebe better stop, tomorrow go - too much quaq (frozen skin)". I still cherish a faint hope that we may get off later in the day even if we only get as far as the next igdlo Segerquaq 16 miles, where the owner Mr. Niaqoq is supposed to have some dog feed as he Killed four walrus this fall. Barometer 30.a, Tempr. minus 20° F. So we made ready for a quick start but at noon I gave up any hope for today. Cleaned the sled out from snow and packed all the loads. For a short interval the wind abated for about half an hour only to come back with renewed force Took a short walk over the tundra. Eutrema Edwardsii is very abundant and specimens as tall as one foot were seen piercing through the snow in several places. Carex incurva also is fairly common above the dunes. Elymus aren. is still very common but is low and stunted. I have had trouble with the shutter of my small camera. In low temperatures the moment shutter did not work at all. At Port Hope I uncovered the mechanism but did not dare to take the very complicated mechanism apart. I washed all the working parts with ether to remove any lubricant and had the pleasure to find that it worked very satisfactory today. On my large private camera that I sent in the mail I have the same shutter "Compur" and have used it in Greenland in -25F. without difficulties. While the sun at noon cut through the haze I made a trial exposure of the house and the sleds. Temp. 4.5 1/50

Sun. Jan. 30 - The wind went down almost entirely and changed to N.E. at midnight. Everybody was so happy that the house got up and had the kettle boiling at 1 a.m. and we had our first breakfast. At 3.30 a feast was held and we all gorged in with with rice, cornmeal, flapjacks cooked in seal oil - the smoke from the preparation of same kept me from sleeping before first and second breakfasts. Further, fresh baked bread, bacon, seal oil doughnuts and coffee in quantities. At 4 a.m. the therm. showed - 31o F. A fair wind from N.E. and the most magnificient auroras I have seen on these latitudes in Alaska. When the wind died down the tempr. in the house at once rose several degrees. In most places in Alaska the conditions for house-building are very adverse. This house is a good example. The house was built this summer. The floor is dug down to the ice that is a few feet under the top soil. The floor is laid on a layer of dirt. The walls are set of (mostly cottonwood) splitpoles and a thick wall or embankment is filled up against this palisade of sod. The house is thus only a few feet elevated over the ground. Durin the winter the ground ice is cracking continually and fissures are formed, often of considerable extension. Often such a fissure strikes a house and the whole thing cracks and the fissure is almost impossible to fill. Many of the lakes and lagoons freeze to the bottom and I have in numerous cases seen frost cracks running from the tundra behind clear through the lagoon and even continuing for some distance through the sandpit that separates the lagoon from the sea. The explosion like sound that follows the forming of the crack is often followed with a quite distinct trembling of the ground. We were off at 7.45 a.m. We had not got very far from the house when the wind came up again. Not very strong but enough to make the snow drift along the ground. Everybody down in the igdlo had had colds. I finally got one myself last night and was pretty bad today. I was breaking trail and had a hard time in keeping my face thawed. Stopped an hour midways between next cabin and last one to chop some walrus meat for the dogs. After we started again my half leader the little siberian Rock froze his penis very badly. I gave him a piece of reindeer skin on but it was I am afraid too late. Later my leader too started freezing his penis and flank and would not go ahead. At 1 o'clock the wind was pretty bad and we stopped at the igdlo at Segequaw 15 miles from last house. A.R.C. gives 18 miles. Meter 421. At 3 o'clock the wind was the same and

we decided to stop here for the night. My cold is of course much worse and I feel pretty miserable tonight. The place is crowded and small but a pretty good cabin built of lumber. We do not have very good luck lately. I hope it may change soon. I should not travel in this kind of temperature with a bad cold, but I cannot see how I can help it.

Mon. Jan. 31 - Fine weather and almost calm. 37° below in the morning. Wanted some dog feed and was offered one seal skin full of seal meat for $17.00, but refused to take it. It is always that way with these people when you want something and they think you got to take it they will stick you up unreasonably while if you have some you can get it for a lot less. Started at 10 and came to the white men at Qipisatqo at 12.30. Meter 437.9 or little over 13 miles of which the last two were going across the lagoon. We wanted to go on to Pt. Lay today only some 8 miles but could not get leave to go. These three white men came up here on a 13-ton schooner this fall and have been wintering here. They are in for trapping and trading but have as far I understand, had little luck with both. We were well-received and enjoyed having a good meal without any seal oil flavor to it. A little after we pulled in our host from the last place and his son pulled in so that we were almost as badly crowded as last night being eight big men in a place only made for three. There was of course lots of things to tell and questions to ask and we did not get to bed till late. I bought some stuff from the traders and gave Adam Bird a nice grubstake in return for the grub we have been eating. He got 20 lbs of flour, 10 lbs sugar, 10 lbs dried apples, 9 lbs cornmeal, 1 package of chewing gum, 1 can of lard besides a lot of little things we had been able to give him and the house before leaving. I think he was as he used to express himself "plenty happy". Temp. at night 38° below.

Tues. Feb. 1 - Foggy and hazy. Temp. in the morning 14° below. As always when many people are starting (we were five team) the start was late and we did not part from our hospitable host till half past ten. Followed the sandpit all day. Passed Pt. Lay up without stopping, 445 or nearly 8 miles. Going in many places rough from sastrugi as hard as ice and the light being poor it is impossible to see the unevenness till the dogs are in it. Very tiring for the eyes. We were looking for good wood as we expected to camp out and lots of times I mistook the straw of an Elymus ten y~~e~~ard off for a big log put up on the sandpit. At 4 p.m. we came to a small village called Naparautchiaq and stopped. We were prepared to stop out but the houses were exceptionally good and we were invited to stop and were glad to accept. We bought a whole seal for $4.00 after first having refused to pay $6.00 for 25 lbs of meat without blubber. We had enough walrus meat but it is kind of rotten and the dogs do not care much for it. At night it cleared up again and the temp. feels like 38 again. We should make Icy Cape tomorrow. Meter 455.9 or 21 miles travelled.

Wed. Feb. 2 - Up early. Blowing stiff from North. Temp. 21°below. I feel like laying over myself but Bob was anxious to go and started before me. He had slept in the other house and was charged $3.00 for board. After I had first refused to pay overprice my host was very reasonable and I bought a pair of fine reindeer muckluks, made for himself. That is work you never see on stuff sold to whites and was only charged $4.00. In the morning when I was ready to pull out he insisted on giving my dogs a light feed for nothing. The going was tough (as usual). My load is not so very heavy now, we do not pack much dog feed but still the pulling is so hard that I cannot move the sled alone on the smooth snow. I had to protect the dogs from freezing and they did not want to go at all. I do not blame them either. Bob froze two dogs pretty badly. His dogs are in poor shape. My dogs are played out but not in worse shape than that a few days rest and good feed would bring them back on their feet. I stopped and waited several times but did not see Bob so I thought he might have camped. He had the dog feed and I decided to go through. In the evening the wind went down a little and the snow stopped drifting

but still bitter cold. I left at 9.15 and arrived at Icy Cape at 7.30 nearly ten hours. Meter 489.6 or 35 miles. Same as A.R.C. Bob pulled in two hours later. He had walked ahead of his dogs the last ten miles. Stopped at the native trader's agent for Liebes Co., Opikehoon Allen. Since we came to the lagoon we have been following for the last four days we have travelled along the low sandpit most of the time. It is mostly very narrow from a few to a couple of hundred yards. In some places dunes have been built up beyond the reach of the surf and here some vegetation is found, while in the northern end particularly hardly anything is found. Elymus, a low Oxytropes and a Pedicularis of Arctica type are the most conspicuous. Wood is abundant except near the villages. Since Port Hope I have hardly seen a spruce log it being all cottonwood and willows. Some of the logs are good size and may be more than 12" and 24' long. 20 miles below Icy Cape I picked up a big shell (~~[illegible]~~). I did not know they occurred in the Arctic. It is 4½x2" and right hand twisted. I am going to preserve it for the Museum. Icy cape is the first place between Port Hope and the North where the natives have reindeer. The management is from Wainwright and I could get no information here except that they did not increase much and that the management was incapable of handling the proposition.

ICY CAPE

Thurs. Feb. 3 - Rested the dogs. Raw and cold with a northeast wind - 34 below - barometer 29½. Native Opikshun Allen is in charge of the store of the Cape Smyth Whaling and Trading Company - interesting the half-breed type brought up by the white whalers at Point Barrow. He is an intelligent fellow with remarkable good English. His wife is a cousin of Mr. Wheeler's wife. Opikshun is a great admirer of Dr. Rasmussen who had stopped here for about a month.

Fri. Feb. 4 - Cold, but almost calm in morning. 40 below. We left at 8.15 and hardly had we got out of the village before our usual head wind came up. During the day the wind increased and soon the snow was drifting as usual. When breaking trail with a head wind like this it is impossible to keep your face from freezing. We are getting used to it though. My cold is not any better. Pretty hard to get rid of it in this kind of weather. I think we shall stop at Wainwright for some time.

Stopped at A.R.C. shelter cabin, 30 miles from Icy Cape at 4 p.m. Bob came in an hour and a half later and had left a dog on the lagoon. Wind went down at night. Meter 518.9. The cabin is occupied by a bunch of Eskimo trappers. They are really not allowed to use the shelter cabins but we did not complain for we found a nice and warm cabin and everybody anxious to give us a hand with the dogs I cannot help thinking of old Dr. Hrdlicka whom I met this summer and who was advocating to pass a law prohibiting anybody from travelling in the Arctic during the winter. He said he did not believe that anybody who wants to go on a trip like that could be sane and consequently ought to be looked after.

Sat. Feb. 5 - A fresh wind was blowing this morning but to our surprise, from the south. The snow is drifting very hard and travelling in the opposite direction would have been impossible. 38 below. Bob's dog had not come in in the morning and is, no doubt, frozen to death. The trail follows a string of small lagoon with short and low portages between. I made fairly good time, although I had taken some of Bob's load. Six miles below Wainwright I stopped to take a few photographs of some very high pressure ridges off the coast. One place I estimated the height to be over 20'.

After 4½ hours going, I came to Amundsen's place at Collies Point, 3½ miles below the village of Wainwright. A white trader by the name of Dick Hall lives here. We were hospitably received and invited to stop as long as we wanted. Our dogs had a good feed of salmon after ten days of rotten and fresh meat. They do not like the meat diet and are not doing very well. Hall has a team of the largest dogs I have ever seen. He did not know what kind of breed they are but they are excellent for heavy hauling. They are too short haired. Hall made a

great meal for us of all kinds of fancy dishes that we have not seen for a long time. Meter 537.6 - distance 19.4 miles.

Sun. Feb. 6 - Fine weather with a southerly breeze. Leaving for the village in the afternoon and stopped at Jim Allen's place. Allen is a well known man on this coast and I already knew him well from reports of earlier expeditions. He used to be a whaling Captain, but since the decline of the whaling industry has been trading for Charlie Brower. Meter 541. We intend to stop here for a few days to rest the dogs.

Mon. Feb. 7 - Fine day. 34 below. Barometer still rising. We are feeding the dogs walrus meat. Dog feed is rather scarce and costs 10¢ a pound. We have a fish cache here, landed last summer by the S.S. "Boxer" but we like to save it for the trip to Barrow. Allen is a very interesting man and knows all about this country. We paid a visit to the School House. Visited the school teacher and his wife. There is also a young white nurse here. I cleaned out my sled and tried to dry it out by making a big fire. It gets hot enough inside but the cold outside condensing the vapour and it is almost impossible to get the canvas dried. This again makes the canvas airtight and frost accumulates during the night. On the trip to Nortak River we never had any trouble of this kind although the temperature was lower than it is now. I rather doubt if the camp sled is really suitable for travelling out of timber. It should have been built especially for the purpose and should have been about 2' longer and the canvas should have been double. I shall have to do something about it when I get to Barrow.

Tues. Feb. 8 - A light wind from the north. The dogs, at least mine, are improvi already. 34 below and glass is still rising. Mail arrived from Point Barrow.

Wed. Feb. 9 - Under the warehouse Mr. Allen, six or seven years ago, excavated an ice cellar and has used it to quite good advantage. The hole was sunk under the floor about six feet and this shaft was enlarged to about twelve feet by twelve fee and the floor of the cellar is fifteen by eighteen feet under the surface. The warehouse gives so good insulation that the summer heat never thaws the side of the shaft which is closed by a heavy trap door. Allen says there has never been water in the cellar although he mostly leaves the trap door open for the sake of ventilation. The cellar was cut out, partly through muck and partly through solid ice. A thermometer placed at the bottom of the cellar showed - plus 6F. In the warehouse above the thermometer showed - minus 28, and out of doors - minus 36.

Thurs. Feb. 10 - Had made up our minds to move but when we got up a cold and disagreeable wind was blowing from the northeast so we put it off for another day.

Fri. Feb. 11 - Today is one month since we started from Kotzebue. Wind still blowing from north. Snowing in the afternoon and till late in the evening. Took my dogs out to Collie Point to warm them up. Trip seven miles. Made up account with Jim Allen who soaked us $9.00 per day for room and board for the two of us. Dog feed we paid 10¢ for and everything else in proportion. I ought to be used to it, but it gets my goat still, when you see the way we are held up wherever we go. I suppose we are considered game because we are Government men. $4.50 a day is more than we have paid any place in Alaska and the food we eat would be paid for by one dollar apiece. In this case I cannot help being disappointed because Jim Allen seems to us too fine a fellow for this. We have not received much help or hospitality yet that we have not had to pay for beyond reason, and still the people act as if they were treating.

Sat. Feb. 12 - Wind still blowing, but sky clear. Only 10 below in the morning, but the temperature dropped during day as the wind increased and it was bitter cold. We decided to get a start and pulled out about 11 a.m. My dogs are in fine shape now but Bob's are still poor. Snow drifting low but managed to protect all

of the dogs from freezing up.

My face that had almost recovered from the earlier freeze up is so tender that I got frozen a couple of places again. Saw Eutrema Edwardsii one place. Elymus still common in suitable places. A Potentilla of emarginata type is very common in the tundra. There is a number of grasses that I cannot just place. One is probably Poa eminens but I am not sure.

The true Dupontia Fisheri is rather common and a small Poa that is neither artica or abbreviata. I should have collected some material but my fingers are too cold. Collected something that I first took for Gnaphalium supinum but as I could only find one small specimen and as Artemisia is common I may be mistaken.

Driftwood is plentiful; cotton wood, 2 logs of spruce only seen. No birdlife. Below Pt. Lay I saw two ravens! flying north and one south bound, all flying low following the coast line.

Two tracks of white fox.

The fur catch is exceptionally poor this year, especially foxes. Trappers are complaining all over the country. Catch estimated at 1/8 of normal. I stopped at 7 p.m. at a small village named Atane, 20 miles north of Wainwright. Meter 561.3. The map is very inaccurate from Wainwright. This village is marked 6 miles below its real position.

Sun. Feb. 13 - Blowing hard and drifting badly at 7 a.m. so we were not anxious to cross the Peard Bay. At 10 the wind went down a little but snow is still drifting and we cannot see over a hundred yards. Of course we could start and I think we could cross the Bay and find the house on the other side but this wind and minus 21 degrees means a new freeze up of dogs and faces so we stay today. We have grub for about a week and three more feeds for the dogs. Barometer has been rising for the last days and is 30.6 like yesterday. The house is good but somewhat crowded but the people generously made room for us. They had been out of sugar and we could spare them a little. The village is small. Only three houses are inhabited. The population totals 24 souls.

At noon the weather changed to a regular blizzard and we were grateful that we did not start. I hope this is not going to be another Kugatsiaq experience. Glass steady or rising a little. In the evening 30F. below.

Our people spent the day with rest and worship having two or three services each accompanied by numerous hymns and endless prayers. Between we played cards - the Eskimo card game "Peenach". A game I have only seen in Alaska. I believe it is original Eskimo and they are all very keen on it. I learned to play the game in Wheeler's house and have had much fun playing as we travel along. Before leaving Kotzebue I bought some decks of cards and have found them very useful to pay for services received in the igloos. The game is played by 2, 3, 4 or even five. If the number of players are 4, two and two are partners. Three cards are dealt out and the rest cut and laid down. The idea is now to get good cards before the real game begins. The forehand plays the next man a card and if he got a bigger card, he can take it if he wants to otherwise he throws off and has another card played to him. Every time the card played is replaced from the deck. The last card is trump. After the whole deck has been divided up then the game starts. The man who got the last card leads. Now you have to play a bigger card or trump. If you can't you pick it up. The man who first gets rid of all his cards wins.

Some, especially the old men are very good at the game and often show surprising shrewdness. If you have a good memory you can, of course remember where every card is and play your cards accordingly.

I showed the people the big shell I picked up below Icy Cape. They all know it well here and say it may even be bigger than the one I have.

Mon. Feb. 14 - Weather as yesterday but cleared up some later in the afternoon. A small herd of deer had been driven down to the village. Went out to the herd and took a few pictures. The herd was just a small bunch of stray deer, probably not over 70. Three were butchered and I had an occasion to see them closer. One

lbs? (undressed) other one measured was length = 5' 4" 4' high. The animals looked much smaller than I have seen below and were not in very good condition. Three bucks in the herd had already dropped the horns while the females and the steer and probably the yearling bucks still had theirs. The steers still had patches of velvet on their horns. Considering that this herd is not close-herded by any means, the animals were very tame, though this may partly be caused in bad weather as the deer, as well as caribou, are always less scared ~~in bad weather~~ than when it is fine.

Tues. Feb. 15 - Weather fine and almost calm. Only a little wind from northeast to keep up with the rule. We left Ataneq and followed the beach a few miles before we crossed the low sandspit to the beginning of Peard Bay. Set course by compass E. 30 N. but something was wrong with the compass and although I kept the course by the sun, the needle kept oscillating and was not of much use. At noon a wind came up and snow started drifting as usual. It was getting cold. Temperature - 28, but later it went down again and was almost calm at night. Hit land a few miles too far in and followed the coast till found the igloo at Nerdlerniavik near another uninhabited place at Tatsipissua. Meter 583.8, distance 22.5 detour probably 1.5. The map is not very wrong after all.

Gave Bob the big white dog I bought in the Nortak delta. He is no good and is only pulling back in my team.

Full moon I think today. At 8 p.m. overcast and milder but minus 31 before bedtime again. Barometer 30.8.

Wed. Feb. 16 - Weather fine and almost calm. Air moving a little from north. Temperature below 30. Barometer 30.7. Left 7.45 and passed the empty house at Tatsip-issua two miles north of our stopping place. Good going on the sea ice 16 miles and made over 4½ miles, then 5½ miles rough ice with snow and good ice again. Stopped and waited at 3 p.m. Meter 612.6 or 29 miles. Would have continued but found our next igloo was uninhabited and we had no wood. The beach is covered up with lots of snow so we bought a little wood from a man living here for some tobacco. His house was hardly more than 6 by 10' and nine were living in it so we camped outside. Barometer 30.5.

Thurs. Feb. 17 - Foggy and chilly, though only 10 degrees below. Left camp at 7.50 and had smooth ice, some places with soft drifts. Snow hard pulling.

Point Barrow at 1 p.m. Went through the village to the Cape Smyth Whaling and Trading Company where our fish cache is and stopped there. If we decide to stop for any length of time we should try to get a place of our own. Meter 634.3 Distance 22 miles. In the evening the wind that had been from north changed round to west. The thermometer rose to 3 degrees above. The last month we have only had 10 below two days and all the rest not less than 20 and most of the time between 25 and 40 degrees below.

Distance from Kotzebue to Point Barrow 498 miles. A.R.C. gives 511.

38 days en route of which, leaving the runs between Collie Point and Wainwright out, makes 20 days of travelling or 25 miles average. Of the 18 days we stopped 13 were caused by bad weather and only 5 for resting dogs.

My dogs are all fat and save two that have slight cuts on their feet and Rock that froze his penis, they are all in good shape. Bob's dogs are poor but are getting a little better.

In the afternoon I had a native trapper from the coast mark down in the sea chart all the native cabins he knew of between Barrow and Barter Island. I was surprised to see how many people live in there now. We were asked over to the doctors who is missionary of the Presbyterian Church too. Besides Rev. Newhall and his wife there is a married school teacher Mr. Sylvester, a nurse Miss Dakin,

POINT BARROW

Fri. Feb. 18 - Westerly wind and snow. Barometer 29.6. Visit to the school house in the evening. Mr. & Mrs. Sylvester.

Sat. Feb. 19 - Went up along the beach experimenting with the friction of steel runners compared with wood. I had two sleds of approximately same gauge and weight. One had soft steel or iron and the other hickory. The one towed the other one and on the one experimented I had Bob as "load" and a spring scale on the towline. We travelled over all different kinds of snow viz. sea ice with about one foot hard snow on, beach with hard snow and tundra and lagoon. The steel shod sled averages from 48 - 60 lbs. with extremes at 12 and 96 lbs. while the wood averages 16 - 32 lbs. with extremes at 4 - 60. I want to put wooden runners on my sled here as we shall hardly need to go on new ice between here and our destination. Westerly wind with moderate temperatures. Developed a film and found that almost all my outdoor pictures are out of focus.

Sun. Feb. 20 - Iced a pair of wooden runners and tried to see if that improved the running. Tried it out like yesterday. I think it pulled a little easier, but not very noticeable. Went out on skis with the dogs but found the skis very hard pulling. They are of hickory too and I do not see why they pull harder than the same material on a sled. Cold and foggy. About 20 below.

Mon. Feb. 21 - Started on my sled. Took the tent off and took it into the store. Cut two runners 16' by 2½ by ¾" and planed them. I decided to make an extension on my sled by building up a stanchion on the new shoe.

Tues. Feb. 22 - Continued on the sled. 30 below and calm. Developed another film with poor success. I do not know why all my pictures are unsharp and dull. Dinner party at the Hospital.

Wed. Feb. 23 - Assembled my sled. I cannot put the tent on it in the store and it is too cold to do it outside so I will leave it off. The extension makes the sled 1½' longer and it is now 11' with full top 11' by 30". I have been talking to several people about getting a team to haul dog feed as far as Beechy Point. Hope to get one, but it is rather hard as most of the dog owners are out at their trap lines. Minus 42F. Strong auroras at night.

Thurs. Feb. 24 - Finished the sled and took it out. Iced the runners and took a two hours drive to try it out. I think it is an improvement. Tried two dogs out. Found one O.K. and tried to buy it for Bob's team. Owner reluctant though I offered $40.

Written in the evening.

Minus 44 degrees last night and 47 degrees during the day.

Beastly cold. The air is very damp and even on the finest day the air is full of fine ice crystals and though it has not been snowing since we came there is a layer of fine "snow" of more than four inches since we arrived. Very strong aurora N.E. - S.W.

Fine day but foggy below.

Fri. Feb. 25 - Made repairs on my harness and towlines. A little below 40 all day. I have had a native woman fixing up my fur clothes the last few days and started her on a new pair of pants.

Sat. Feb. 26 - Milder - minus 12 degrees F. - cloudy with N.W. wind. I had made arrangements to have the mail carrier go down to day to Tatsip-issua to get his brother up who he thinks would like to get the contract to take our fish up to

his towlines had been chewed up by some pups, he said. He is taking the mail south on March 1st. so tomorrow is too late for him to go. I must try and get somebody else if we shall not want to stay here another ten days. There is hardly a team in town that can do it as all the trappers are at their traplines. The season closes on fox on March 15th this year.

Sun. Feb. 27 - Weather as yesterday with a northwest wind. Dinner at the school house, Mr. Hegness from Cape Halkett came in early in the afternoon. He reported hard going on account of soft snow to the eastward. No dog food can be obtained except at the reindeer herds to the south and eastward from his place . Nothing has been heard from east of Halkett yet .
Cold and clear at night.

Mon. Feb. 28 - Cold wind from northeast. Went down to the village where our fish cache is and took 700 lbs. of salmon up. As it is rather doubtful whether the man from Tatsip-issua would take this cache to Beechy Point or not I think we shall consider young Brower, the son of one of the owners in the C.S.W. & T. Co. who offered to take the contract for the same price \$200 - grub furnished. Temperature 32 below, glass very high.

Tues. Mar. 1 - Mail left for south. Made ready to leave tomorrow if possible. Cooked beans, etc. Had the rest of our gear finished. New pants and some mitts. Got medicine from the hospital for snowblindness. Bade goodbye to our friends.

Wed. Mar. 2 - Snowing and blowing from northeast but not very bad and temperature only 10 below. Settled with the Company and had to pay with personal checks on my bank account in Ottawa. Our bill here runs to over \$300. It was noon before we were ready to start. Tommy started first, I next and Bob last. Our total baggage is 1150 lbs. salmon, 150 lbs. blubber and 150 lbs. provision.

	lbs.	1450.
Tents and general equipment of expedition -		150
Personal -		300
		1900 lbs.

Complete list on page

Tommy packs 600 lbs. of our fish and is taking his wife and a one year old baby along. His wife, a fat young woman, sits on the load all the time and with his personal dog feed and dunnage his load must be well over 1100 lbs. He has a small sled and 13 dogs but makes as good speed as I i.e. about 4 miles an hour. Bob bought one dog and left one - is slower as before though his load is smaller. My biggest dog Nep is sick today. I don't know what is the matter. His right paw is very sore. It looks as if it had been frozen. He never had it before. He hardly wanted to eat either. Followed the sandspit about 6-8 miles and cut across to the other side where we change course. Mag. SE. 6 N. or 96.E. Wind hauled around to N.W. too. Followed the bar or reef where we had a fairly good trail.

Took a bearing on the sun at noon. I have no equation of time so the result is not absolute 1st rate. Set my watch 20 minutes back. Barrow time about one hour fast. Stopped at 4 p.m. at a small igloo Tapkeluk Island after 4½ hours travelling. Meter 646. Distance (12.2) but wheel was hit by a dog and the cyclo did not work for an hour so distance at least 16 miles. Place miserably crowded and I felt like taking my bag out in an empty snowhouse outside.

Thurs. Mar. 3 - Weather fine with a nice little wind from S.W. Left at 7 a.m. but forgot my snow shirt so I had to go back on skiis with the team leaving the sled which delayed me over half an hour. Nep's foot is very swollen. Snow hard pulling and no ice. Took some photos going along. Camped at Larsens cache. A miserable place where some boat was wrecked three years ago. Meter 672. Distance 26. Temperature 30 at noon, probably 40 at night. Nep's whole leg is swollen

now and he has fever and is very miserable. We squeezed outselves into the cache and had just finished our supper when Hogness pulled in. We had expected him to stop at Cooper Island and now this place is even more crowded. It is a great life. I do not know if I admire or curse the woman. She rides on the sled all day and is not doing much around. Hogness who is an ex-mail carrier is a poor kind of a traveller. He came into our camp wringing wet from perspiration and would have frozen to death if he should have slept out. He came from Ukivik.

Fri. Mar. 4 - Foggy in the morning but about noon the sun got through and we had another fine calm day of the kind that makes you forget all your previous disagreeable travelling days. Nep was very sick and I doubted if he could run or if I should have to take him on the sled, so I let the others start first. I cut an opening at his wrist. He did not want to follow so I took him in tow. We found the first house only 6 miles farther up the coast and wished we had pulled out last night. We had been burning some pitch from the oil seepage that we found in the cache and some had run out of the stove and got on most of our cooking utensils. Hogness stopped at the first house to dry his clothes and we stopped at the next one mile to the east and had lunch. I squeezed about one pint of pus out through the hole I cut in Nep's leg; he seems to be much relieved. Started again at one o'clock. Cape Simpson, 7 miles from first cabin and 13 miles from Tangent Pt. Pulled on till we found a good place for a snowhouse and stopped on the ice of Smith Bay at 4 p.m. Meter 688.4. Distance only 16½ miles. Snow all day very tough. There are small drifts sometimes one foot deep and pujurassaq snow on top. We only made 3 m.p.h. and had to walk all the time. The snow was not very good and it took us nearly two hours before the house was finished, but it was a very good house. Nep is much better and had good appetite. Barometer steady 29.55.

List of equipment and provisions when we left Barrow.

General		ego	
Bob			
1 sled	160 lbs.	sled	140
fish	200	fish	250
Blubber	100	blubber	50
Skiis	16	provision	100
personal eq.		trunk	64
2 sleeping bags	40	Skiis	16
	100	field glass)	
Grub box	40	camera etc)	10
		sleeping bag	16
	[illegible]	Personal	50
			50
			740

Provisions

9 lbs.	Oats
12 -	Sugar
6 -	Bread
5 -	Butter
6 -	Figs
4 -	Chocolate
1 -	Salt
½ -	Pepper
25 -	Beans and bacon
20 -	Reindeer meat (raw)
3 -	Coffee
	Tea

Provisions (cont'd)

2 gal.	Coal Oil
1½ lbs.	Candles
30 box	Matches
3 lbs.	Tobacco

Sat. Mar. 5 - Fine day again with a little wind from the north. Left the camp 7.10 a.m. and followed some old tracks for a few miles but lost them and set course for Pitt Pt., Mag. E. 10 N. We crossed several pressure ridges and had a lot of low hummocks which however, only made the pulling easier. Tommy's sled capsized a couple of times but nothing broke. We stopped at noon for half hour and had a cup of tea. Met a trapper out on the ice and changed course for his cabin some miles west of the Point. Reached the house at 4.p.m. Meter 714. Distance 28 miles. Distance across bay 30 miles. Neb is better today. Hogness came in a little later. He left this morning and followed our trail. It is getting warm at midday now and in the afternoon it was only 24 below while at night it still gets down to 30-40. The small whitefish is getting common here and the natives have them. We had some frozen tonight for the first time.

Sun. Mar. 6 - Foggy and cold. Slept long and did not start till 9.10. Followed the coast and came to a white trappers cabin at Pitt Point. Stopped here for lunch. 9 miles from our nights stop. Left again at 1 p.m. and arrived at the store at Halkett at 3½.Meter 754.4. Distance 20 miles. Pt. Barrow to here 104 miles. Hogness has quite a place. He started in here for the N.W.M. & T. Co. last year. We had a big feed cooked by a young fellow - his partner. Wind from the N.E. and miserably cold though the wind was not strong, but the damp air made it so cold.

Mon. Mar. 7 - Misty and foggy with a N.E. Wind. We rested the dogs. Neb's left leg is much better but the pad of his right foreleg has been frozen and I am afraid it will cause trouble. We had some repairs made at the dog shoes. Helped Hogness with his kodak. He is a beginner and has had poor luck so far.

Tues. Mar. 8 - Fine day. The mist disappeared about 7 a.m. and we had a light breeze all day from S.W. Passed Cape Halkett a little before noon. 13½ miles from the store. Set course Mag. E. 12N. for Oliktok Pt. 5 miles out we crossed a fresh bear track only few hours old. It was a young bear that came from the head of the bay. It probably was very near in amongst some pressure ridges a few miles off but we had neither time to hunt or use for this bear. Stopped at 4½ and built a snowhouse. This time we built a round one. Tommy has never seen one and I am not very experienced and it took us too long time but the house was much warmer. Meter 760.3. Distance 26 miles. A few hours after we left Neb's paw started coming off and he is probably done for. I should kill him as he will be of no use this year even if he can drag himself to Oliktok but I could not bring it over my heart and as the fish is plentiful yet I will give him a chance. Temperature 24 at noon. Colder at night.

Complete list of equipment.

2 sled greenland type
2 pair Norwegian skiis
2 " ski poles
1 7x9 tent, 2½ wall, single
sail silk with heavy bottom.
2 bamboo poles
2 ice chisels (spears)
2 axes
1 snow saw 3' blade

Complete list of equipment (cont'd)

1 snow knife
20# 6' dog chains
2 tin pans
1 primus stove
1 sheet iron stove
2 reindeer skins
2 " " sleeping bags
1 eiderdown " "
(1 eiderdown left in Barrow)
2 sets of harness and towlines for two teams of 10 dogs
6 extra harness
2 " towline sections
1 coil heavy walrus line, 10 ft.
50 dog. kamiks
18 " blankets
2 pack sacks
1 azimut compass, needle 3"
1 " " oil 2"
1 camera 2½ x 4½. Zeiss Tessar 4:5
10 rolls of film
1 Kodak 1A
1 tripod for camera
2 yellow filters
1 actinometer
1 aneroid barometer
1 pocket thermometer
1 large "
1 bicycle wheel odometer
2 watches
1 alarm clock
2 pair snow glasses
2 " field glasses 6 * 8 x
1 portable Remington Typewriter
1 medicine chest
    1 # iodine
    2 bromo quinine
    1 opium pills
    6 grs. cocaine
    1 box asperin
    bandages
    adhesive plaster
    1 btl. pine tar balsam
    1 " pure alcohol
    1 knife, forceps, needles, etc., etc.

Steffenson	My life etc.
Stuck, H.	A winter circuit
Leffingwell	Canning river
Kleinschmidt:	Eskimo Dictionary - new edition

Letter file,
Note books
Charts and maps
Triangle
Transporter
slide rule
2 fountain pens.
1..

Wed. Mar. 9 - Fair, fresh wind from S.W. Left at 7:30. Had 10 miles of pretty rough ice but going otherwise good except for the snow that is very bad for the dogs. The surface is soft small drifts made of frost crystals, not real snow. The air is so humid here on the north coast that even on the finest day the atmosphere is hazy with fine frost crystals. I think this forms the larger part of the precipitation in the wintertime. During our stop at Barrow the ground was covered by 4-5 inches of this kind of snow ~~in~~ despite ~~of~~ the fact that the sky was clear everyday. This kind of snow is very bad on the dog's feet and they are bleeding and sore all of them. Bob left a dog on the trail a few miles from camp. It had a swollen leg and simply laid down to die. Passing the mud flats of the Colville that ~~this~~ extends farther out than the maps indicate, we struck soft snow for about 5 miles and the dogs played out quickly. I tried in vain to find snow for a snowhouse and we had to put up a tent. Neb is doing remarkable well, gave him a boot on, but the foot started bleeding and I had to take it off again. Meter 788. Distance 28 miles. Temperature 30-35 below.

Thurs. Mar. 10 - Like yesterday. Start 7.30. Changed course for five miles to get out of the soft snow and fell back to E. 12 N. Arrived at Oliktoq at noon. The others came in an hour later. The best of Bob's dog suddenly died in the harness a few miles from last camp. Meter 804.5. Distance 16½ miles.

Fri. Mar. 11 - Blowing hard from S.W. and snow drifting. Cold. Left Oliktoq at 10 a.m. and set course about E. true. Dogs going fine but their feet bothered by the snow. Arrived at Beechy Point. 1½ p.m. Meter 821½. Distance 17 miles. Put up for a few days rest with the branch of the Liebes store run by Mr. Anton Edwardson. One of the largest individually owned herds are a few miles from here and I hope to get a chance to see some deer.

Sat. Mar. 12 - Blowing harder. The owner of the herd Tarpok came in, talked with him about seeing the herd tomorrow if the weather permits - taking pictures. Had a sail made for my sled (10 x 8') and started a woman on some dog kamiks.

Sun. Mar. 13 - Blowing very hard but clear. Wind went down at night. I am thinking of leaving tomorrow alone and try to get some dogs for Bob to the eastward. He has only seven dogs left and they are all played out and can not pull the sled to Mackenzie. We first thought of hiring a team, but it will be cheaper if we can buy the dogs. One of Fred Hobson's boys died some time ago and his dogs may be for sale. The other two Hobsons are to come down here in a few days. On my way to Flaxman Island I will see them and either make arrangements to buy some dogs or to have one of them go to Herschel with Bob. I want to go up one of the Rivers to the eastward myself to take a look at the country up in the foothills where the best feeding grounds are to be found. This I can as well do while Bob is getting a team together. In the evening I got a good deal of reindeer information from Mr. Edwardson and weighed about 25 carcasses bought for the natives.

Mon. Mar. 14 - The finest day for months. Almost perfectly calm and almost warm in the sun at noon though the temperature was as low as 40 below. I started to get ready early. Put flour and water on my runners and loaded up the sled. While I was doing this Tarkpok's boy came along with the whole herd about 4-6 miles to the south. In field glasses I could follow the streak of steam over the herd. I would have a fine chance to get some nice pictures of reindeer, so I postponed my start and went out to the herd. Tied my dogs to Leffingwell's cairn on Beechy Mound, where Sam Hobson's coffin is placed on the ground temporarily, and continued on foot to the herd that was trekking slowly to the westward. The herd totalled between 6 -800 animals which is more than half of the No. 6 herd. They were very docile and tame and I could walk right into the herd and take my pictures. There was one man with two dogs with the herd. The deer are somewhat poor and too many are undersize. Many are white and spotted almost 20%. Remarkably few bulls. I only counted 14 of which 10 were yearlings and not one of the

remaining 4 were real large or even good size. They had shed shortly after Xmas the boy said. The herd has been kept on this ground for too long a time and the ground is overgrazed. They never get a chance to go back to the hills where grazing should be much better. The owner is keeping them close to his place in order to have the meat near at hand and is getting meat for his family as well as for the dogs from the herd. The deer has without doubt suffered much from mismanagement and could be improved much I think. One bull was killed and I took the following measurements:

6' 4" long from tail to nose
3' 2" high over shoulders
3' 4" - - hips

He was rather poor but weighed 142 lbs. dressed. Not many warble grubs. Tommy Brower started back in the afternoon with my check for $200 for his service.

Tues. Mar. 15 - Fine day like yesterday with a light breeze from N.E. My thermometer only registered to 40 below but it must have been at least 45 in the morning. My big yellow dog Neb is in fine condition except for his left foot where the pad has left a big open wound. It does not bother him as much as one should think but unless I carried him on the sled it would be inhuman to take him along. I therefore accepted Mr. Edwardson's offer to trade him for one of his dogs. The dog is older and slow and probably has other faults too. I put flour paste and ice on my runners - a very cold job. You take a basin with the flour and water and dip your hand into the paste and apply this to the runners. During the process you have to be careful not to let your hand freeze to the runner as the skin may come off. The warm palm of the hand makes a smooth surface that later is covered with a varnish of pure ice put on in the same way. Settled with the trader and gave Bob credit for $100. He will wait a couple of days and try to get some dogs and later catch up with me at Flaxman or Collison Pt. where I expect to go inland. It was 11 before I got started but the sled pulled fine because of the iced runners and I made 4 miles an hour in spite of the heavy load of 5 bundles salmon and grub for 10 days. I could ride all the time as my weight did not seem to influence the going any. Stopped half an hour at an igloo for lunch and continued to Heald Pt. where I stopped at 5½ p.m. at Pansanna's igloo. Meter 844.5, Distance 23 miles. In the afternoon the usual mist came up and deposited a thin layer of frost. 8 miles from Beechy Pt. I met Steve Hobson, the youngest brother of the boy that died. He was going to B.P. to get medicine for his brother Alfred who was sick and had been ill since his brother died.

"Diagram of Pousanna's igloo at Heald Point"

Wed. Mar. 16 - Very cold, probably near 50. Assisted by Pausanna I started putting a new coat of flour on my runners and cooked it this time on P's recommendation. It was a beastly cold job and I had to go into the house a couple of times when my hands started freezing. If you are not careful you may loose the skin of the palm in this way. Unloading and loading the sled took some time too and it was 10.30 before I got away. The wind had shifted back to S.W. just strong enough to make the snow drift but too light for the sail. The first 13 miles to the west side of Foggy Island Bay was rather bad going because of snowdrifts. Set course across the Bay by compass E. 12 N. Mag. Tigvariaq Island 2.15 and came to the island at 5.30. Stopped here at a native cabin for an hour and pushed on 10 miles more across Mikkelsen Bay to Bullen Pt. where Alfred Hobson's place is. Arrived here at 9 o'clock Meter 880.3 Distance 36 miles. Alfred was in bed and complained of trouble with his stomach. He fell ill the day he came back from the funeral and has continued to have trouble with his stomach. I took a look at him but could not see anything wrong. I think it is a state of nervousness caused by the death of his brother. He has had a hard time this winter. Poor luck in trapping and worrying about himself and the outcome of the large family, I think,

is the main cause of the illness. I intended to make Flaxman tomorrow but he was so anxious to have me stay a day that I promised to do so. I cannot do much but it may help him some psychologically. . I gave him some advice as to diet and a little bromide. As with most of these people he thinks if he only had some medicine he would be alright. He is turning to religion too.

Thurs. Mar. 17 - Stayed all day at the Point and did my best to cheer the fellow up and think I helped him to forget his worry. His brother Steve came back from Beechy Point in the evening. Bob had tried to get ready to go with him but was too late. In the afternoon I put a good coat of flour on my runners and made a fairly good job of it. It was a very nice day, almost calm and though the temperature was below 40 it was not "cold". Mountains show up very clear.

Fri. Mar. 18 - Wind from S.W. - very cold day. Left Bullen Point and had the satisfaction that Alfred was out in the morning and helped me to hitch up my dogs so I hope the day I spent here was not wasted entirely. Stopped at an igloo 9 miles from Flaxman Island and had a cup of tea. After that we sat for a while talking about the poor fox catch. Funny enough when we got out of the house we saw a big red fox coming down towards the house about 20 yards away. All the men grabbed their guns and started ~~wildfiring~~ but before the ~~first~~ shot was fired the fox was far away. Stopped at Leffingwell's house on Flaxman where a trader - Mr. Castell is wintering. He has with him his wife - a young native girl from Nome, and his family. I wanted to go on a few miles more to Brownton Point but could not get away. Tomorrow I should make Collinson Point. Meter 899.7 - distance 19.6 miles.

Sat. Mar. 19 - Another fine day. The sun is getting warm now and at noon I could feel that the dark coloured fur on my arm feels warm. The flour on my runners were still intact so I just put a coat of ice over before I left at 9.30. Stopped at Brownton Point where a Mr. Henry Chamberlin is trapping. It delayed me nearly an hour. Later I stopped at the mouth of Canning River where a native has his camp. This man is a good hunter and has got 29 foxes. I took my grub box in but was not allowed to use it and had lunch of stuff like canned fruit, jam, butter, nice crackers etc., Lost another hour here and it was 6 o'clock when I got into Mr. Jack Smith's place at Collinson Point. Meter 930.7 - Distance 31 miles. Dark and overcast in the evening. If the weather is clear I am going up to the mountains tomorrow by way of Marsh Creek.

Sun. Mar. 20 - Snowing and blowing, from the east. I could travel on account of the weather but I could do nothing else. . Three of my dogs are sorefooted and need a rest too.

Mon. Mar. 21 - Snowstorm from the east. Broke my thermometer. The last one except one large centigrade therm. that only registers to 25 degrees C.

Tues. Mar. 22 - Fine and comparatively clear. Hired a boy and 4 dogs to go with me. Left 3 of my dogs and took his four into the team. They were very poor and not of much use. We followed the higher parts of the very level plain between the mountains and the sea 17.5 mile and camped at the foothills. On the way up I dug several places to take and look at the vegetation. Type something between tundra and fjaeld mark, entirely different from the tundra below. Closer to the hills I found a dry browse type with low, prostrate willows.

Very little "moss" if anything. Noticed Lutrema Edw. several places on the low tundra before the first hills. Ground very uniformly covered by snow 1 - 2' deep. This very rough near the coast while the drifts were getting lower the closer to the mountains we came.

Type below - wet low

sterile now, but the boy told me that some years there were a few berries on the "qimernat" plant. Also Salix reticulata, Carex ? stylosa, Cassiope tetragona. Eutrema Edw.

dry low

Oxytropis sp. Luzula sp. Poa sp. Pedicularis capitata and P. sp.

dry high - sandstone ?

Saxifraga tricuspidata, Potentilla emarginata, Bupleurum americanum, Salix Uva-Ursi, Tofieldia ? pal. Arenaria?

Wed. Mar. 23 - Snowstorm from west and miserably cold. I had planned to take a walk up through Sunset Pass to the divide into Sadlèrochit River and if nothing of special interest was seen, to go back to the dogs and return to Collinson Point in the evening. Now I could accomplish nothing by doing so and I have no time to spend in waiting for the weather to abate.

I took a short walk up to the low foothills behind camp. Lichens are more common here but only Cetr. islandica or nivalis is plentiful. In these hills, I am satisfied there is no possibilities for good moss and I think one has to go as far back as to the basin behind the coast range to find better country.

Back at 10 o'clock broke camp and started back the same way we came up. Cold and unpleasant trip back against the weather that grew more disagreeable as we approached the coast.

Back at the cabin in the afternoon. Bob has not showed up yet. I do not know if I ought to wait any longer. He has had 9 days to come up in now and it only took me four. Meter 964.6 Distance 17.

Thurs. Mar. 24 - Fine with south west wind but not so strong as yesterday. I waited all morning to see if Bob should show up, but he did not. Packed up and left for Barter Island 12.30.

Iced my runners and made good time. The flour I put on at Bullen Point is still in fairly good shape and when I ice it once or twice a day it reduces the friction very considerable. Stopped at the mouth of Hulahula river and iced the runners again. 18 miles. Continued and arrived at Barter Island at 7 p.m. Meter 993.2. Distance 29 miles. Wind stronger in the evening.

Fri. Mar. 25 - Snowstorm from south west. Late start - 11 p.m. Set sail on other side of Barter Island and gained lots of power. Lots of soft snowdrift and pulling hard but sail helped about as much as 5-6 more dogs and when the going was not too bad I made about 5 miles an hour. Stopped for tea at the mouth of Jago River where a white trapper lived in a shack dirtier than most of the native houses I have passed.

Tried to pass up a small village some miles further up but the people stopped me in quest of news.

The trapping season closed this year 2 weeks before usual i.e. March 15th but the people up here never had any news of the change and are still trapping. I do not know who is to blame, but as there is no game warden in this district it seems as if the commissioner in Barrow should have sent a mail up the line. The commissioner, however, is manager for the N.W.T. Co., the largest fur buying concern on this coast, and naturally is interested in getting as many furs as possible. My sail caused some trouble when the wind hauled a little. The rig I used is just a square sail 10 x 8' and is hard to use when the wind is not dead astern.

The meter broke down a couple of times and I lost some miles

that way probably about 5. Camped at an igloo at Humphrey Point at 7 p.m. Distance 24 plus 5 ..... 29. Meter 1017.5

Sat. Mar. 26 - I could not get to bed last night as the people sat up talking to 2 a.m. and consequently this morning they did not get up till after 9. I generally do not mind sleeping in native houses but this house was almost too much for me. The owner had most of his dogs in the house too and I had to share the floor with 7 big pups that all night disturbed me by licking my face or pulling my hair and finally went to sleep on my chest.

A fair wind was still blowing when I finally got started at 11 a.m. and I set sail but before long the wind died. I wore the flour off my runners in the rough ice yesterday and did not put a new cover on. I wish I had for the sled pulls very hard. Stopped 8 miles from Humphrey Point and iced my runners which helped some. I did not make more than 22½ miles and camped at a small village on the west end of Icy Reef. Meter 1039.8.

The first people I have met on this coast that did not understand any English at all. At the same time probably the most hospitable I have met. When I came in after having fed my dogs I found them busy cooking feed for my dogs. The mountains are very clear again. They have not been visible since I left Collinson Point.

The old man here told me a lot about seal nets and showed me one and demonstrated its use. It is always made of seal line here even in recent days but the art of catching seals seems to be mostly practiced by the older generation. The nets are about 20 mesh deep and about 25 long. mesh 15½ inch line thin as No. 2 cord. Suspended across a crack in the ice or sometimes suspended like a hammock under a blowhole. Only seal~~s~~ caught is the natseq (phoca hispida)? The knots are tied double.

illustration

Seals are here mostly caught in the spring out on the edge of new ice when a new crack is found and new ice is formed a net is set across. The knot~~s~~ used is the ordinary fisherman knot only the end is tied twice around the loop instead of once because the seal line gets slippery when wet. .

About 1 a.m. I was not a little surprised to see the woman of the house get out with a big pot of flour soup and start to feed my dogs. She explained that she always liked to feed a stranger's dogs, when he camped there. At mealtime everybody but the son of the house went over to eat at the neighbours and left us to eat alone. I tried to find out if that was a sort of courtesy but the boy evaded my question saying that they often did so. I have still salmon for 3 or 4 days and made a great hit by giving them a few salmon. The old man has eaten salmon once when a boy and the woman never. I did not get to bed till two o'clock here either.

Sun. Mar. 27 - Beautiful morning when we got up. Unloaded my sled and put a fresh coat of cooked flour on. Before I was through a fresh wind sprang up from northeast and when I was ready to start it blew a gale. I was not in mood to stay if not necessary and as the glass was fairly steady I decided to try to make Demarcation Point today. It was, however, too much for the dogs and after 3 hours drive I stopped at the late Ned Arey's cabin on the mainland and was glad to find an empty dog house for my dogs. Before leaving I was presented with a caribou tongue from the old woman and with a brand new case for my snowglasses from the boy. I was quite touched and felt utterly poor myself having nothing to give in return except a few cans of corned beef (that I know the natives do not care for, because it is too salty). Meter 1049.6, distance 10 miles only.

In the evening we had a hurricane but it only lasted a few hours before it went down again.

Mon. Mar. 28 - Fine day with a light wind from northeast.
Started at 7.45 and stopped for an hour at Demarcation where the C.S.W. & T. Co. has its last outpost. 3½ miles more brought me to the boundary line when I stopped for another hour to take some pictures of the monument on request of Mr. J.D. Craig of the International Boundary Commission. The monument was in good shape. I dug out the concrete foundation that was drifted over with snow. There is one crack in the concrete on the south side and the upper section of the body is slightly loose.

I left Canada May 24th and have thus spent little over 10 months in Alaska. Continued 6½ miles more to the H.B. Post at Clarence Lagoon when I stopped at 3 p.m. Meter 1069.9. Distance 20 miles.

Tues. Mar. 29 - Fine and calm in the morning. Iced my runners as usual and was started at 8 a.m. Took some pictures of the mountains and the low plain. Before I had travelled long a strong northeast sprang up. Stopped at an empty igloo for lunch and iced my runners. The snow on the ice is getting salty and eats the ice very fast. Stopped at Nunaluk. Meter 1100.6 distance 31 miles. Herschel Island is only about 15 miles from here but I do not want to come in too late in the evening. Wind hauled round to S.E. as the temperature went up in the evening. Fed my last fish from Barrow. At 8 p.m. it blew a hurricane and rained a little.

Wed. Mar. 30 - Fresh breeze from S.E. Started at 9 and arrived at the village of Herschel Island at 1 o'clock. Was kindly invited to take up my quarters with the Police. Went over to the H.B. and bought a load of seals. I hurt myself a few days ago lifting on the heavy sleigh and have been bothered a good deal since. I felt kind of bad all day and in the evening found that I had a temperature of 104 so deemed it best to take to bed till it got better. Meter 1118. distance 18.

Thurs. Mar. 31 - Worse than yesterday, high fever. On arrival here yesterday I found that the operation of the wireless station had been discontinued last fall and I shall thus not be able to report to Ottawa before Aklavik. To do so was one of the main reasons for leaving Bob and go on alone. In my itinerary I gave 1 - 15 of March for Herschel Island and if this illness continues a few days more I shall not be in Aklavik till the middle of April.

April 1st - 3rd - Herschel Island. Howling blizzard northwest. In bed with [redacted] fever ~~and~~ heavy pain. Inspector Caulkin kindly arranged that Constable Tayach and a guide should accompany me to Aklavik as soon as possible.

Mon. April 4 - Wind going down some. Left at 10 a.m. Constable Tayach on my sled. I was dressed up as warmly as possible but was miserably cold all day. We crossed a series of lakes, lagoons and marshes and I noted the amazing quickness with which this type of vegetation changes from high arctic into boreal or transit near the big river. I think I saw viviparous Elymus in quantities. I felt ~~bad~~ at night and had a high fever again. Meter 1147. Distance Stokes Point 17. R.C.M.P. cabin behind Kay Pt. 12. Total 29.

Tues. April 5 - Felt better in the morning. Start at 9. Cold and stiff when we stopped for lunch at King Pt. Ice somewhat rough and we wrecked the odometer before we got very far. After King Pt. I got into the sleeping bag and was much more comfortable there. Shingle Point in the afternoon. Very hospitably received by the H.B. factor Mr. A.A. Carroll.

Wed. April 6 - Mr. Carroll lent me a bandage that helped me a lot, also a hypodermic syringe in case I shall have to make an operation on myself before we get to Aklavik. Weather very fine in the morning early, but before we were

and we according to their experience should not go. Had a good days rest. I think we made about 25 miles today.

Thurs. April 7 - Fine and almost calm. Started at 9 sharp. Odometer fixed 1153. Fine travelling on lagoon and sea ice. Passing Blow river we had a cold wind with lots of drifting on the side. Camped at the Moose River. Police cabin at 2.30. The door had blown open and house was half full of snow. Meter 1178.8 Distance 25.8. Two long day's run to Aklavik from here, but we will strike timber tomorrow in the morning and shall not be bothered with wind probably, but may find snow on the river. Still it has not been snowing for a long time and possible drifts should have hardened by now.

Friday April 8 - Fine and warm. Start 8.15. Stopped one hour for lunch and continued till Alekoq Cabin on the main river a few miles above the first spruce. Fine going all day. We only travelled 6.25 h. and made 31 miles. Meter 1209.0. Lots of ptarmigan and sparrows. After we hit the first spruce we also saw a number of whisky jacks (Canada jays). The delta flats are covered with thick copses of 15 - 20' alder with patches of willows . Largest is the scented willow that sometimes grows over 20' high. The type entirely conforms with similar deltas of Buckland, Kubuk or Noataq in Alaska. First signs of thawing noted on south exposed banks. Dogs are holding up fine.

Sat. April 9 - Wind from the south. Left at 7.30. Fine going and no difficulties whatsoever on the few and short portages. My sled, it was feared at the island, would not go through. Arrived at 4½ Distance from Alekoq miles. Meter ....

.... End of second leg of the Expedition ....

....

We were hospitably received at the police barracks. I got my mail and was shown all our stuff that had been received and cached out in a tent since last summer. I am afraid many things are in a bad condition.

Sun. April 10 - Fine and mild - thawing. Saw Dr. Cook who confirms my diagnosis of internal injury caused by lifting my sled. Too bad. I really have no time to stay in hospital. Dr. Cook thinks operation not necessary and thinks that I shall be in shape to continue travelling after one week of absolute rest. Wired a short report to Mr. Finnie. Wired U.S. Biological Survey (Palmer) for information about a Dominion Reindeer Co. Ltd., that the Times writes are taking 5,000 deer into N.W.T. from Alaska. Went to the Anglican Hospital in the afternoon and started serving my time.

Mon. April 11 - Bob came in together with the Rev. Geddes whom we met on his way to Herschel. The H.B. Manager came to see me. There seems to be a chance that we may rent a house belonging to the H.B. Co. from the end of this month. Dr. Cook showed me a small dovekie and asked me to name it. It was brought in by the H.B. factor, Mr. McAlpin from Kittigazuit where a native had killed it a few days ago. The native did not know the bird.

I have later ascertained that the bird was not killed but found dead on the ice. No other seen there before or later (Aethia pusilla)

May 10 - Have been in hospital now for a month and am, I am sorry to say no better than when I came. Doctor confesses he does not know what to do. On 8th and 9th., Bob made a trip with dogs to the Black Mountains west of the Delta, accompanied by Constable Fielder of the police. He reports snow all gone in the

marsh plants - Juncus arcticus, Eleocharis, Ran. reptans, a.o. shows sign of spring activity. Few rock ptarmigan were seen, also a black fox, also fresh tracks of caribou and what may be hoary marmot (Marmota coligata) and some old tracks of mountain sheep. First geese passed Aklavik on the 9th - first duck on the 13th.

May 21 - Am still in the Hospital but have been up a few hours the last three days and am scheduled to leave on Monday. (It seems to clear up fine and the Doctor is most enthusiastic). Bob has been up the river about 8 miles from here the last week and is busy cutting wood for next winter. I have been busy making requisitions for next year and am wiring it out Monday. Spring is here now. There are open leads along the banks of the river and the ice may go out in the next two weeks time. Had reply from the Customs of Vancouver, B.C., whom I wired about the 6 parcels I sent from Canada about last January. The lot has passed Edmonton, Alberta, and is now in Waterways waiting for the boat. Ducks and geese and some cranes are passing every day. The first willows are in bloom.

Mon. May 24 - Cold and windy. Left hospital and went with Bob to his camp a few miles up the river. I am going to take a few day's vacation before I start in on my work. Went out a short trip in the afternoon to some small lakes behind the camp. Saw three kinds of ducks and two kinds of geese and a myriad of lesser birds. The small and shallow ponds are all ice free while the lakes have thawed out along the banks only. Sent the requisition off and received wire from Mr. Finnie who has placed $1000. with the H.B. Co.

Tues. May 25 - Fine day but still rather cold and windy. Walked around and studied "wild life" with my field glasses and a gun. Sat all afternoon watching the spring life in some small lakes that are all icefree now. A few rats come out during the day, but not many and they are very evasive while in the evening they are not watchful and can be approached easily. I think they feed on the rhizomes and stolons of plants as Menyanthes . Sparganiums, Carices, a.o. But I am not quite sure. Opened stomach of one, but contents so finely masticated that nothing could be seen readily. I have seen them chewing something up several times, but owing to the distance I could not clearly see what it was. Numerous ducks pass; mostly in twos and fours, seldom in flocks. A few brants also. No large flocks of geese yet. Two Bonaparte gulls frequent the ponds too and the large seagull Larus marinus is often seen also. Only predatory bird seen was one small hawk.

Vegetation is coming to life fast. Salix still only flower obs. on the other side of river saw patches of one Salix about 20' standing in 3 foot snow and flowering. Snow still frozen near ground. All the catkins only out on the south side. Arctostaphy. rubrum will be out soon ~~and~~ Hedysarum, Pirola and some Poa are the only herbaceous yet, but still far from fl. Alnus is not out yet. Saw Hab. obtusifol. and Gal. trifidum.

In the evening crossed river and went up in the open lead on the other side in canoe. Bob went through ice when going into canoe. Got two rats today.

Wed. May 26 - Bob still cutting wood for next winter. Hung around camp and took some pictures and studied wild life. Lots of mice. One short tailed sp. is very fond of fresh green mosses and eat Cetraria too when wet. We got two more rats. All four are ♂ and very fat. Had fried rats for lunch. The fat is a little strong but meat very good. Dogs are not doing very well on oatmeal straight. River rising fast. Bottom ice coming up along border. Had to take canoe to other place.

Thurs. May 27 - Cold and blowing; decided to go back to Aklavik, leaving 11 dogs

Fri. May 28 - Weather fine in the afternoon. We decided to move back to Aklavik and went out to the island again and Bob finished the wood. He has quite a pile of greenwood. About 8 miles further up he has a lot of dry wood from previous operations. I am still too weak to do much work but want to do some work at the main camp. Started breaking the camp in the evening. Had lots of difficulties in getting the dogs down the steep cut bank into the canoe. The open lead between ice and bank is getting dangerous for a canoe, as bottom ice is coming up all the time. Going back we took a load of rafters to be used at the main camp. Pretty heavy load with the canoe on top. All 17 dogs lined up made quite a show. Took pictures.

Sat. May 29 - Cleared up the house, etc.

Sun. May 30 - Launched the canoe in the shore water lead and tried the Evinrude. Had some difficulties in starting. Went down to first bend below and hunted rats at some lakes. We need meat badly for the dogs. They have been subsisting for two months now on rice and oats and are getting sick, probably scurvy. Broke my leader in for rat hunting. He is very anxious and learns the job easily. We only got 11 rats.

Mon. May 31 - Cleared up the house and did some writing. Went down river about 8 miles with the canoe. River ice cracked at the entrance to Aklavik River. Crossed here and hunted at some lakes on the other side. 15 rats.

Wed. June 1 - Bob went up river with Mr. Gourli from the wireless. I stayed behind to do some writing. Cleared up the kitchen and set up a table and a shelf. At 11 p.m. the ice started moving and jammed against this side. The whole village is out ratting. Some came back hauling the canoes over the broken ice, some stayed out. Bob came back in the morning leaving the canoe a couple of miles up river.

Thurs. June 2 - We bought 45 logs caught in the ice, from the wireless station for $5.00 and salvaged them, rolled them up where they were safe from the ice. There is about 2½ cord of good, one year old wood. Skinned rats, etc. River all open tonight.

Fri. June 3 - Went down below Aklavik river ratting. 34 rats. One rat is 2-3 lbs. of meat. Some of them we trade for rat meat. Bob was splitting wood. Developed a film. Filled two gasoline drums with fresh ice from a stranded ice cake. Drinking water is nowhere to be obtained and everybody uses ice cut last fall and stored in icehouse. These two drums got to last us till the water gets clear. Went up river this morning to fetch the canoe.

Sat. June 4 - Wrote letters and report. In the evening went up the Peel west branch and up the Husky river with the canoe. The spruce is getting smaller as we approach the west side. We returned from a place close to the foothills. Started snowing. Had trouble with the motor. Could not start, thought caused by cold. Paddled most of the way back. Round trip about 32 miles. Rats are leaving the lakes and are getting numerous in the sloughs and rivers. Found Corrallorhiza trifida from last year.

Sun. June 5 - Cold. Wrote letters and developed a film. Bob went on trip with white trapper in the evening. He came back late next morning. More engine troubles. Does not look promising.

Mon. June 6 - Bob took flywheel and magneto off the motor. Something seems to have been grinding as the magneto was all covered with copperdust. Points in mag. also separated. Motor seems to work satisfactory after repair. I helped him and wrote letters, etc.

Tues. June 7 - Made myself a stretcher bed. Visited the Pokiak family. The old man is said to have had 47 children (with several wives of course.) He does not remember how many. He is probably one of the last Mackenzie eskimos. He is the only man using the labrets that I have seen so far. When I came in he was having a shave with Gillette safety razor. He and his sons own several schooners and boats. Their house is lighted from a Delco light plant, etc. The object of my visit was to find out about a possible portage for us when we come out from the Husky lakes this fall. He and his wife knew of two. One through Settidge lake and one east of Kittigazuit. He used to go in every summer caribou hunting. We plan to go up to Separation and down the east branch to the Lake Settidge to find out about the portage as soon as we can get ready.

Went a couple of miles up the river and collected some plants in bloom in snow.
Arctosth (Alp?), Anem. Rich, Stell. longipes, Caltha pal.,
Alnus, several Salices, Ribes triste, Petasites sp.
Developed films in the evening. Glass going down, overcast.

Trip to East side of Mackenzie Delta in
search of a portage into Husky Lakes.

……………………………………

1927
Fri. June 10 - Got ready to start. Loaded up the canoe. Got time from wireless station from Edmonton. We are taking 24 gallons gasoline, 2 gallons oil, grub for about 14 days, tent and other camp gear for light travelling. Plant presses, guns, etc. Start at 6½ p.m.

Sat. June 11 - Kept on going all night making about 4 miles p.h. Followed ~~east~~ Peel R. Stopped for lunch once. Killed 4 ducks for meat. Killed a muskrat for Junior last night. Thought him dead and was not looking when I grabbed him. He was not dead however and took a good bite at my wrist where he cut one of the big arteries before I could shake him off. I knew you should never take a rat except by the tail but I thought the fellow entirely gone. It was bleeding badly but a tight bandage stopped bleeding at once. Very hot. The ducks shot last night were just thrown in the bottom of the boat. Not 12 hours later we found that they were getting sour. Vegetation much ahead of Aklavik. Whole landscape green and many flowers out. One very beautiful blue Lupinus is adorning all the dry cutbanks. Aspen and balsam poplar quite abundant but all small about 30 f. limit. No birch or tamarack. Stopped at Indian houses at the mouth of Peel at Craig and Watson's camp at 2½ p.m. Used about 8 tanks gas going up, about 17 hours. Put tent up and went to sleep at 6½ a.m.

Sun. June 12 - Slept nearly all day. Craig, Mr. Watson's partner that we met down river came in last night. We woke up in the morning and had breakfast. Bob went right to sleep while I sat up the whole forenoon talking to Mr. Craig who is an educated man who came into the country during the oil rush as a surveyor and has been here since. One of the pioneers. He is trading and trapping now and has a wonderful knowledge of all the Mackenzie Indian. Got much valuable information about the country and people. Went to sleep again at noon when it got too hot and the mosquitos were too numerous. Of plants we only noticed the Shepherdia that we had from Fairbanks, Als. Pirola grand. in full bloom. Alder and Populus is entirely out.

Started at 10 p.m. went up the Mackenzie, took slough a little below Separation and came out on other side of island. Here sandbars and shoals. Strong north wind and showers.

Mon. June 13 - Stuck for some hours. Fresh track of wolf. Followed west Shore

to find place for crossing main stream. Saw entrance to each channel set out for the Lop stick, marking the entrance. Wind and water soon too rough. Stopped motor and went for sail. Took but little water. Entered east channel. Stopped for cooking - continued - went up the most easterly channel. Motor making trouble. Bolt loose. Camped at noon at small creek. Slept.

Tues. June 14 - After fixing motor continued turning left at fork of east branch. Passed unoccupied fish camp. Stopped at one more camp and continued to Gull Lake River where white men camp, not there. Made coffee. Continued up the River one hour. Saw hills. Limestone. Here fork of river leading through small lake. Took it to get close to mountains. Came to lake close to hills. Camp. Climbed hills, collected all day. Fine day, splendid views. Saw hills extend far to N.E. Saw Rc. Mts. to the west Mountain range quite clear. Gull and Campbell lakes to S.E. Took numerous bearings and photos. Took latitude. In evening canoe trip to east end of lake. Climbed here but could not see over range. No game except birds. At lake two eagle's nests (Osprey?)one goose or loon nest on cliff shelf. Numerous cliff swallows nests near water, below eagle's nest. One hawk's nest on hill side. Swallows still building. Hawk and eagle and loon still with unhatched eggs. Collected some butterflies.

(See list of names in book)

Wed. June 15 - Preserved collections. Cold day - overcast. In the afternoon went out to get some meat. Went down the river and investigated several smaller lakes going down. Climbed a hill and sat there for a long time using my glasses. Lots of old rabbit trails on the hill. It is remarkable that there is absolutely no game in this country. This should be typical moose country. Not even ptarmigan or grouse. Only land animals seen so far ~~is~~ are mice. Saw one muskrat. Whole result of todays hunting was one mallard and two teals - not much for two hung~~d~~ry men and a dog. Went out on collecting trip at 6 p.m. - back at 12½. The Flora of these limestone hills is in every way different from what we have seen before.

Thurs. June 16 - Rained all night. Cleared up in the forenoon. Broke camp and after some trouble with the engine started at 3.50 p.m. out of the creek into the Gull Lake River at 4.40. Continued upstream taking bearings all the way. Towards evening it got cold and foggy. Entered lake 6.15 in the middle of some willow swamps all flooded. Followed a channel for a couple of miles in order to get over to the south side where we wanted to get to some heights visible over the willows. Found the outlet of the channel blocked by ice. Dragged the canoe through willows and got into water behind the willow island and landed on a narrow strip of land below a 445' limestone promontory, for the first time of a rocky beach where we did not get our feet all muddy. Set up camp and cooked a couple of black ducks. After supper climbed the promontory but when we reached the top the fog descended over the lake and we could see nothing. Herring gulls and cliff swallows nest on the promontory facing west.

Fri. June 17 - Took observations for latitude at noon. Climbed the highest point 445' of the west or south west end of this range taking the instrument up to ~~to~~ try to get something of the lake and surroundings. Built beacon and proceeded to the north following ridge in the hope of getting so far up that I could see the end and what is beyond this lake. Travelled over a rolling plateau covered with dense brush, alder and willows with intermixture of a fine spruce and tamarack. All this country has been burned probably 50 years or more ago. Once This was a dense spruce forest of which the burned and charred trunks and stumps bear evidence. The undergrowth is 1 - 2' high. Ledum groenlandicum, Rhododendron, Myrtillus, Potentilla fruticans on the drier places and low Arctostaphylos rubra and Andromeda on the ridges also Dryas octopetala and Arctostaph. Uva-ursi.

The hillsides undoubtedly were covered with lichens before, now the brush is becoming in too thick for the lichens and no extensive patches were noticed. Fought my way about 5 miles to a hummock and when I got here found that another ditt still obscured the view I had hoped to get. Climbed a tall spruce and saw the end of this lake and a couple of smaller lakes and far away a large, ice covered lake probably 10 - 15 miles away. Took bearings. Observation for latitude and time. Found some fossils (Mollusks & ?) in a small exposure and collected some specimens. Back to camp at 11.15 p.m. Bob had in the meantime collected plants and preserved the collection and overhauled the engine. We had no meat today and substituted by a dish of flour, sugar and curry cooked together. Wonderful combination. This is a poor place for game. On my trip today I saw a couple of loons but besides nothing bigger than a Whisky Jack. We have trolled in the lake and creek a couple of times but caught nothing so far. There are Jack fish though evidently they are not civilized enough to take to the troll. Fine clear day with north wind.

Sat. June 18 - Cold and blowing from northeast. Trouble with the engine. The ice pack is still against the willow island. Yesterday there was a narrow passage along the shore, but when we came round we found ice closed and had to break way through. In places the ice was too thick and the canoe had to be dragged. Start at 12.10 in clear water at 6 p.m. Stopped in the bay on the north side of the lake for hunting. Saw what we think was a beaver but lost it. Tried to get some ducks but could not get close. A bolt broke. Stopped. Bob fixed it up again. In the meantime I took a trip eastward, The foreland is here about 2 miles wide covered with muskeg. Black spruce and a few White Spruce, Birch and Alder along some small creeks. This country must have been lousy with rabbits many years ago judging from the network of well worn trails and numerous skeletons. There are none now. A Tree squirrel was all our guns provided for today. Camped at 12 p.m. Saw a moose antler. Very decayed. Climbed a tall white spruce and took bearings. I think I could see end of lake a few miles up. Rain in the evening.

Sun. June 19 - Rained rather hard all day. Went out hunting ducks at 5 p.m. and got one. Broke camp at 6 and proceeded east to end of lake - got 4 more ducks. No river. Saw trapper's cabin, probably the Smith's. Return to other side (n) of lake in order to climb hills there. Wet trip across 1½ miles swampy water to my knees. Climbed hill and had a splendid view over the not very wide stretch of land between this ~~side~~ and next lake (Setidgi). All low land with hundreds of lakes all covered with low timber or alder-willows. All we could see of a river was the outlet a little further west the cabin on south side. Took numerous bearings and drew a sketch of the portage. There is still unbroken ice on Seltidgi while all the other lakes are open. Clearing up in the east.

Mon. June 20 - Returned to the boat. Saw ptarmigan (still white). Killed 4 ducks. Set out for the river. Small, but deep and very crooked river or creek. Had to track over one shallow rapid. Came to trapper's cabin (Smith?) Stopped for tea. Continued about ¼ mile one creek came in from south. Followed main creek for a while but finally gave it up because of bad log jams. We had lost our axe and it was a hard and sometimes next to impossible job to break them"by hands". Tried the creek. It soon grew very narrow. Continued in spite of jam and obstructions - set on reaching some lakes seen from a tall spruce. Succeeded - passed two lakes when after finally disappeared in willows near a small lake. Climbed tree. Big lakes to south. We must be close to Lake Seltidgi. Camped at 5 p.m. after 24 hours travelling. Fine day with east wind.

Tues. June 21 - Fine day with breeze from east. Travelled on foot mag. N. 20 E. in hope to reach shore of Husky Lake. Passed one small and one larger lake and a swamp and found finally after 2 hours travelling further progress stopped by a

for small boats. Both banks are steep and the river fringed by tall white spruce. Climbed one. Could see the lake, probably still five miles to east. The river comes from the (foot)hills to south through a small valley. Turned south and climbed the north side of about 100f. high plateau through which the river flows. Got a good view of the lake. The river evidently flows into some of the lakes seen from the south range on Monday night. In case the creek we came up on is navigable for canoe in the fall, a portage from this Husky Lake River to the end of creek would be practicable. Distance not more than 4 miles, probably less of which at least one would be by the two lakes on the portage. This country is one A reindeer country i.e. winter range. It is accessible over the Husky Lake. As a whole about 9/10 of the land has 100% forage value. On the higher plain there is good lichen range and except where the timber is too thick. The ground birch and other browse is available. Nowhere has snowmarks been noticed to more than 2f. and hard snow will nowhere be found. Most of the timber is black spruce and of little or no value but sufficient white spruce for cabins can be found almost in any place. Canoe birch is in places predominant on the hillsides. Mosquitos are abundant but, probably due to the breeze not intolerable yet. Saw dropping of caribou from this spring. Returning to camp the wind dropped and the mosquitos came up from the swamps in clouds. Travelling against the sun it looked like a thin haze so thick were they over the ground. In the middle of a swamp, with no clear water at all we found a swan's nest. It was about 4f. diameter built up about 2 f. over the swamp tufts of moss (sphagnum mostly). The male left first before we saw the nest and the female when we approached. In the nest was 6 large uniform grey eggs - 4 by 2 3/4 inch - in state of far advanced incubation. Earlier in the day we found an Old Squaws nest with 9 eggs and two lappland longspurs nests ~~in the bottom~~. Two eggs were hatched today. No game seen or secured. Back to camp at 10½ p.m.

Wed. June 22 - Cooked and rested but did not sleep. Broke camp up and was started down creek at 6 a.m. Mosquitos very bad on main river at 9 and on lake at 11 a.m. Paddled and hunted all way down. 3 ducks and 4 pikes. Crossed lake and cooked. Fair wind - set sail. West end of lake at 2.40 - 1½ h. Smith's camp 5 p.m. Nobody there - crossed to other side of east channel - Camp 6 p.m.

Thur. June 23 - Left camp - going up east branch - 11.15 a.m. Wind light southerly. Engine broke down. Bolt broken after start. Bob tried repair. I paddled down to Indian Fish Camp a few miles above. Engine worked 12.50. Instead of the bolt Bob substituted 2 5 inch spikes tied with lots of cotton twine. Above the bend we overtook the Smith Bros. whose camp we had visited. They were trailing with a loaded scow on their way to Aklavik. We stopped for lunch with them and towed them up the Point and saved them some hard pulling up stream. Left them at the Point. 6.30 p.m. One hour after saw the 4 rocks on the right hand side of channel leaving this island. Stopped 10 minutes for coffee. 3 p.m. larger channel N.E.S.W. that leads into the main river. Small channel or slough distance about N.W. 10.35 hit a new channel about N - S about 3/4 mile above this are two cabins on west bank opposite creek and one on east side main river visible through last channel.

Fri. June 24 - We took the north channel and came out in the main river below Aklavik on the opposite side and had to go upstream for a couple of miles looking for the entrance. There are really many channels to choose between but we fortunately took the right one. The maps are not correct at all. I would be a great help if the entrances and a few more doubtful places in the most important routes were marked with some kind of a beacon. This could be done very easily and inexpensively. We decided to keep going till we got home so we stopped for cooking about 2 a.m. but had to make the meal in the boat because the mosquitos were too bad. A big bear with two cubs had been there when we landed; apparently we scared them away when we came in. They had travelled up the creek. The water was still quite muddy on the place where they crossed the creek. We did not feel like doing

any chasing, so we left them alone. Bob had to hammer the spikes in the motor every once in a while but otherwise we had no more trouble and reached Aklavik at 8 a.m. C. Pedersen had been looking after the dogs we left behind and it was quite touching to see the joy of the brutes to see us back. Some of them look somewhat poor, but then what else can you expect a dog to look the way they live in the summer in this country. It sometimes strikes me that in Ottawa and Washington too as far as that goes, they do so much to protect "wild life" in this country. It would not be all together out of need if they for once did something to protect the "tame life". Still I would not care to be the adviser in the case of the dog and no doubt it would be mighty inconvenient sometimes for the owners to protect the dogs when he has a hard time to protect himself from the "bugs". We unloaded and after a square meal went to bed. The whole waterfront is covered with tents and dogs. Besides our own 17 there is about a score more belonging to the owners of a schooner beached below our place. Dogs are breaking loose all the time and as soon as a dog runs about loose the whole bunch of them - there must be several hundred - begin to raise hell. About 2 p.m. I gave up the idea of sleep and started in on clearing up after the trip.

Sat. June 25 - Fine day, hot, lots of mosquitos. Rain a few hours last night. Bob has been getting the fish nets fixed up and caught 3 big connies and 2 whitefish in the first net, he set one below the mission this morning. Tonight he set a second one. The point right below our house is a good "fish place" but there are so many schooners and nets out that it is of little use to try here. Looked after our plants from the trip and took out of press a few that were dry. Packed and stowed away some rock specimens and some fossils from the trip. Rest of day occupied with different domestic duties. These things take too much of our time. Fortunately for us the "Distributor" is delayed. Wired yesterday Revillon Wholesale, Edmonton, for a lot of much needed spare parts for our motor. In fact we would not be able to use it this summer if we do not get these parts. Wired Mr. McDougal for some river maps and Mackenzie in Ottawa who is leaving for the east and calls at Godhavn. Coming down the east channel two days ago we met a white man rowing a small, empty canoe and about 1/4 miles behind, what we thought, his Indian wife with a big canoe and the outfit. When we came back we heard that this man had run away with an Indian's wife and that the Police had been called into action by the husband and had left this morning in pursuit of the fugitives accompanied by Corporal Belcher and the Police interpreter, who is reported to have said before leaving "that he was going to clean his gun anyhow". The offender "Shorty" is said to be crazy and ready to shoot. In fact Bob thinks he did after we left him. We stopped alongside and talked for a few minutes, but left soon as he did not seem to be very communicative. Bob, when we were a few hundred yards from him, heard a splash in the water behind the boat and saw what he then thought resembled the splash of a rifle bullet, but at the time he ascribed it to a jackfish.

Sun. June 26 - Bob took the engine apart and thought he found the trouble. Anyway the tightening of gears seemed to reduce the jar some, but after few hours running it was just as bad again. He is busy fishing. Our nets about 1 mile below the Mission and has to be looked after 3 - 4 times a day as somebody else will do it if you don't. I am busy with reports, etc. Bob unfortunately had mentioned our meeting of what we think is the wanted "Shorty" also the incident with the splash. I was sorry that he had and told him so and sure enough when the Corporal came back today declaring the fugitive was not in the delta Bob was called upon to give evidence. All he could, of course, was to state that he did not know a man by name Griffin and could not say that he had met him. About the "shooting" the only sure thing was the splash. In the evening the Inspector took occasion to check Bob in using a greenland whip in front of our house. "It was dangerous for passers by". later in the evening Inspector Caulkin asked me to come or rather sent word with the Corporal that he wanted to see me in his house, if it was convenient. I [illegible] custom in this country to send for a man you want to see.

but came over at once. The inspector wanted to explain that he was not trying to be officious at all but thought the checking necessary and hoped it to be taken in good part. Also he wanted to inform me that I had been incorrect in not showing what permits and licenses I was holding. Though I was under the impression going by the text of the permits that say "to be produced on demand by any Game Warden or Police Officer" it had been my intention to bring them to the Inspector and had them lying in top of my trunk when I arrived at Herschel Island. My subsequent sickness however, made me forget all about them. I was very much surprised by the present attitude of the inspector. I had been under the impression that our standing with Police was the best possible and am certainly not aware of any misconduct on our part. In spite of his assurance of the opposite I do think the Inspector was a little officious. We have received much help and hospitality from the police especially when we first came here. I very much appreciated this and first thing I did after leaving hospital was to tell the inspector.

Mon. June 27 - Worked on my reports. Bob fished.

Tues. June 28 - Bob fixed up and set out another fishnet. Received inquiry from Mr. Finnie about my sickness. A despatch had appeared in Edmonton Journal to the effect that I had undergone operation and unless complete recovery, had to go out first steamer. I wonder how that despatch got to Edmonton. Wired back and explained. We looked over two motor launches suitable for our work and tried them out. Am getting information for a wire to Mr. Finnie about them for authority to make purchase.

Wed. June 29 - Fishing and reports.

Thurs. June 30 - Wrote all night. I have for the last week done most of my work at night. Cooler. Am through most of the reports. All left is to type them. Wired the Department about the boats. Bob went out to cut up the wood up river. Had an Indian with him. Tomorrow I am going up with the police boat and a scow when they are through cutting it up. Went down tonight to look after the nets. It is absolutely calm and the mosquitos sure are bad. Down there it is even worse than what we had on the trip. I very seldom get worked up by anything but I sure was when I came back. My face, wrists and ankles are all swollen up in spite of net and gloves. Typed reports and letters.

July 1st.

Fri. July 1 - Tried to get two or three boys to go with me in the police boat to get the scow up to the wood camp and loaded up. Not a single man would go. Went up alone with Constable Kells to run the engine. Bob and the Indian were nearly dead when we pulled in. The mosquitos sure were as bad as I have ever seen them. It has been blowing a nice breeze all day down at the village, but as soon as we got above the island it became dead calm. We worked for two hours and only got a few cords of wood out and had to give up. Police had left long ago. K. couldn't stand it. We went back in the canoe leaving the scow and camp. ½ mile from Aklavik the crank shaft broke without any apparent cause.

Sat. July 2 - Bob started on the wreck of the engine. He found an old machine somewhere in town and after some trouble got the shaft out. Thinks it will work. I wrote letters and reports. We got four Indians today; willing to work they say. Left for the wood at 8 p.m. with police boat. This time I am running the engine. Mosquitos were so bad as ever but this time we were enough to make the loading easier and in a couple of hours the scow was loaded up and we started back. We had figured on unloading on the return, but the Indians had figured out that it would be Sunday by that time so "nothing doing". They would do it on Monday though.

Sun. July 3 - Changed paper on bot. collection and packed the specimens up for storage. Printed some of my negatives from the winter trip. Water not very good for this work, results poor. Bob worked on engine all day. Is having lots of trouble.

Mon. July 4 - Bob finally overcame engine trouble. No answer from Ottawa yet. Probably because of holidays. Wrote letters, etc. Had canoe sail started. Went swimming in the river. Water pleasant, probably about 65 degrees F. but muddy. Horseflies are getting very bothersome. The four Indians unloaded the scow and piled the wood up behind the house. A bunch of Indians went up to Husky river and brought caribou meat back in 12 hours. We didn't get any. Inspector Caulkin has given his permission that every man can kill one in spite of the closed season. Two other gangs went up today. If we had better time I would go up myself. Boiled ham is not very appetizing for the palate when you eat it twice a day for months. The heat is getting bad. Everything spoils in no time. For the last month the mean min. has been about 60 degrees and maximum 84 degrees. Almost daily 80 degrees is registered. Several thunderstorms of late.

Tues. July 5 - Developed some films and printed pictures. Wrote, etc.

Wed. July 6 - Boat is expected Saturday night. No reply from Ottawa yet. It was as I feared. The operator thought he could get my wire cleared that night as N.L. and when he failed he forgot to tell me. The following three days being holidays it was not sent till Monday 4th. He did not even then mention it and it was sent as N.L. and consequently not received till Tuesday and dated 4th. Had it been sent "Black" Friday or even Monday it probably would have had immediate attention from Mr. Finnie. Took some photos - went out swimming. Thunderstorm has been hanging over the delta the last few days. Have of course, seen no lightning but thunder has been heard almost daily. Wrote reports and letters.

Thur. July 7 - Same.

Fri. July 8, - Went through some of the C.A.E. reports. same.

Sat. July 9 - Writing all day. At 12 p.m. boat got in. Met Mr. McDougal and others.

Sun. July 10 - Mail distributed at 4 a.m. We got a very large mail almost 1½ years and it took me all morning and most of day to get through. Started to clear as much of it as possible.

Mon. July 11 - Continued. To bed at noon after being 41 hours on the job. Saw Mr. McDougal in the evening and had a long talk. Saw H.B. General Manager, Mr. Romanet about different matters. Our spare parts did not come in, also a very important M.S. sent through Mr. Finnie is not in the mail. Mr. McDougal wired about it and asked to rush answer about boat.

Tues. July 12 - Wrote again all night. Delivered what was ready at 12 p.m. last night and continued till second whistle of the boat. Got most of my official mail cleared and most important of private. I was very tired when boat finally pulled out. Had only the last two or three days had coffee and two eggs and a slice of bread.

Wed. July 13 - Slept till 8 p.m. Had a talk with Mr. McDougal about the boat. He had tried to talk to the seller but had not had any results; Mr. Bergstrom being a little "full" as he expresses it himself. Mr. McDougal authorized me to close at $1500 if necessary. Had a long talk with Bergstrom. He had cleared up a little. He is the kind of fellow who would rather give the boat away to as the price once mentioned. He had $10,000 worth of

fur in his boat and does not need money. We tried different ways but no use. Cleared up the house and started on Mr. W. Hoare's report brought in by Mr. McDougal.

Sat. July 16 - Aklavik. Since the Distributor left on Tuesday we have been very busy getting ready to leave for the coast. The charter with purchase in view of the boat finally was approved in Ottawa and we could go to work on it. The engine needed an overhauling and Gus and Bob took it apart. Something was wrong with the ignition. Crank case was cleaned out and every part of the engine was inspected. In the meantime I had been getting equipment and supplies in shape. We had engaged an Indian boy, Jacob Drymeat, from the Fort who is to be with us as a camp-hand for the summer. There are a tremendous lot of things needed for a trip like this. We made arrangements with the Eskimo Dennis from Richardson Island who would have left two days ago to wait and tow us down. We got a pilot and saved our gas. His boat is a 40/50 H.P. so the gas bill will be somewhat larger. On the other hand we could get no other pilot and even if I do not doubt that we should have found Kittigarjuit ourselves, we might have lost a day or two as the Kittigarjuit channel is said to be one of the most difficult in the delta. Some days ago I made arrangements with the Manager of the H.B. Co's post at Kittigarjuit to take our dogs down. He was taking a small load in a big scow. Unfortunately he went on a big drunk the evening before and was brought unconscious on board and the boat pulled out on the order of the interpreter. He shall probably not wake up till he is home. Seven dogs were loaded into the canoe and the rest in and on the boat. Pulled out at 10.30 p.m. Aklavik and turned left into the second left hand slough at 11.45. Hence kept to right but passed one more slough on right hand up. Twice after the river forks and we took the smaller right hand channel. This is very narrow in places. General directions I believe about north east true. A grizzly crossed the river a couple of hundred yards ahead of us. At 2 p.m. came to where four channels meet. N.E., S.E. came from S. made slight bend to west and followed N. channel. S. and E. channels are about equal size W. is small and north is largest. Could not see how the current run. Ten minutes later new fork. Left small about N.W. we took right. At 2.35 our slough entered a good sized channel which we now took. This channel seems here to split in three. Going back we therefore should take the right one. Timber seems to be lower now. Shortly after forked. Left fork small. We took the right hand fork. About 3.15 channel split up in three or four islands. We followed right channel. At. 3.25 entered new somewhat larger channel going N. (Return turn right). From about here three peaks just barely visible over the willows to west. Compass E. 160. Main direction of river about E. - W. Small slough forks off left hand. Spruce only in small patches. Cottonwood, alder and willows. Country very low. 3.50 forks again. Smaller right hand fork. Same group of hills visible E.190. 4.10 one small slough to left. 4.17 small slough right (we took left). Saw goose with four young still in down. Speedy retreat to willows. 4.40 river about N.E. - S.W. Low hills. At 5 we entered a big channel and presently got stuck on a mud flat. Worked to 10 a.m. with no success. This engine don't differ from all the rest of them and the reverse was of no use. Tried an anchor with a pair of blocks on. Pulled our own boat off but the tug was about one foot down in the mud.

Sun. July 17 - Started at 5 p.m. Unloading the boat into the skiff also by moving cargo into the bow from stern and thus trimming it. By continued use of engine and tackle we, that is mostly Bob, who was wading and digging all the time, managed to get it off. Loaded up and started upstream of the big channel at 10.30 p.m. Weather hot and hazy. As we rounded the point to turn down the next channel forking east of the main one Dennis got stuck again. Apparently he knows all the turns and shortcuts but evidently he does not know how much a boat of this size draws. He is used to a whale boat but probably never ran a power boat of this size. As soon as we stuck he is through and does not know how to get off again and is perfectly helpless.

Had we not been along he would probably have been on the first mud bank till the next storm raised the water in the river. We or rather Bob got it off only to let Dennis put it on again by wrong manoeuvring. We went out in the skiff and found the channel and piloted him through. In the small sloughs where the mud banks does not change Dennis is alright. We followed the fork N.E. and stopped for an hour's cooking while Dennis filled up his tanks. He has used up two full tanks since Aklavik. From this we took first right hand slough making very sharp turn about 3 a.m. Saw a couple of swans on the big river. Temperature of water is 20.30 C.

Mon. July 18 - Entered almost parallel channels on place where they almost met. Slough entered at right angle larger channel. We went upstream and tried very small channel on left hand. Stuck. Followed main stream some miles and finally entered very large river, that at this place is very straight looking upstream. (Water skyline). Stopped at south pt. of Richardson Island and made a trip ashore, finest kind of country. Continued. Stuck a couple of times but not badly. Channel to Kittigaruit from Richardson Island about N. 60 E. mag. approx. 5 f. Left Dennis at Tunnuok River 6.30 about 13 hours. Stopped for about an hour and then set out for Tununeq where we arrived in about an hour. Stopped for five hours at the south end of Richardson Island and took a walk ashore. Fine reindeer country. But holy smoke talk about flies. When we got back my arms were swollen as if I had elephantiasis, my right eye had almost been closed from swelling of the upper lid. - We made a good collection of plants. Found an old sled almost complete and the bones of the owner next to it. Numerous ground squirrel holes. Saw grouse with young. Continued and arrived at Kittigarjuit without trouble at 4 p.m. Stopped only half an hour and continued four miles east to the fish camp where we landed the dogs in charge of Pete Stromberg. Went out for a swim. I had hardly got out before nearly the whole village joined me and later I saw some of the old men looking after their fish nets swimming around. They have only got one white whale yet. Back to Kittigarjuit. Preserved the collections and finally got to bed at 2 a.m.

Tues. July 19 - Overcast and raining occasionally. Blowing hard at times from the west. I went out for a walk on the island. Followed the high sand bluff for a mile or so and went inland, crossed a swamp and went around a lake and back. Very interesting country different from most of what we have seen before. Mostly very dry and firm and no "niggerheads" like in the tundra in Alaska. The formation is probably not quite the same as Richardson Island although it in many respects is like that. Fine sand with a few pebbles and very few boulders make up the hills. The ground undoubtedly is frozen, but I have seen no traces of ground ice although I saw several places where the "polygonal" structure was very marked, that is very local and in the depressions where the ground is swampy and wet. The vegetation is a semi-arid heather formation composed of species as:- Cass. tetr, Carices, Graminea, Salix, Rhodrodendron, Saussurea, Senecio, Cerest alp. to mention the more predominant. The flora is comparatively "few specied". Carices are compacta, stylosa, stans, rotundata and a few rare ones. Gram: Cal. purp. Poa arctica, arctophila, Festuca, rubra and ovina most common, Eriophora are fairly abundant in low ground. Numerous lakes and ponds were seen all apparently nearly devoid of vegetation. Only Carices as stans and salina were seen and in one place Hippuris, Caltha pal. Very few lichens seen: Cetraria nivalis, Dactylina, Gyrophora sp. Still I consider this very good reindeer country for summer and fall. The ground is everywhere 100% covered and the vegetation made up of 50-75% palatable species. The island here affords a good place for a correl. Bob went up the narrow sound towards the fish camp with the canoe.

(List of plants from Kittigaruit - July 19th)

Wed. July 20 - Unloaded the boat and went round to other side of neck of isthmus

and took on 20 cases of gasoline. Went back and loaded the boat up again. We landed 2-25 gal. drums of gas here for return to Aklavik. We have now

27 cases ---216
1 drum --- 25
1 tank --- 18
259 gallons.

The boat is somewhat overloaded, that is we have little room left for ourselves for the boat could easily carry more weight. Laid out the collections from yesterday, got some additional supplies from the store and went down to the fish camp. Strong west wind and showers all day. Made a trip inland during the night and collected considerable material. Country very uniform, same as Island of Kittigaruit. Rolling sandhills with numerous lakes but not much swampy country. Bottom all firm and good and almost no "niggerheads". One could use horses in this country easily, especially the little "Icelander" would be of great help to future reindeer herders. No traces of ground ice though soil frozen in depth of 8-10" in the depressions. All bluffs are tunnelled through by squirrels.

Thur. July 21 - Laid out collections. Left fish camp for Richardson Island at 6.20 p.m. course 294 for N.E. corner of island. Weather fine off shore wind. Sunshine. Water very uniform about 6-8 ft deep till we approached island. Here we found a system of reefs with deep channel between. Found the house and entered a small bay and anchored on 5 ft of water. Went ashore and found that there is a larger inlet behind the peninsula where we landed. Spent three hours investigati beach flora and a large grave where probably a score of people had been buried duri some kind of epidemic. Age probably between 60-70 years. There were some fine kayaks and sleds. Took a few smaller things from large isolated grave of "Chief" nearby. This grave I imagine is over 100 years old but contained iron things. I noticed fragments of a pot of burned clay. Went around the peninsula and anchored in the other inlet. Had difficulty in finding any channel so had to anchor way out. Set up tent and had supper at about 12 p.m. After supper took a walk across island. Island is built up of sand and gravel in some places with a 2-3 foot top of peaty stuff (muck) and in one exposure I noticed a wedge formation of solid ground ice. But I think the occurrence is very local. Generally there is a very hard and uniform sod or turf on top of sand. In cutbanks facing the sea I saw a few cases of hardpan. Under a layer of sand a 2-6" thick layer of black or dark grey hardpan. Water brackish and no good for drinking. Tempr. 14.5° C. The hills that at some distance look high are hardly more than about 100 feet. The summits are generally partly bare and full of ground squirrel holes. Numerous small ponds are scattered all over island. The north end of island is much divided up by inlets from both sides. Much more than shown on map. Back at tent at 6.30 a.m.

Fri. July 22 - Bob laid out the large collection of yesterday while I spent the whole evening in a vain attempt to adjust the transit. The hair cross was about 12 minutes out when I received the instrument and it seems as if the error is due to an eccentricity of the verticle circle. Sighting the skyline and setting the vernier on zero the hair cross has to be pushed way out of centre of the tube and when inverting the telescope I cannot get the same reading which of course is very bad for astronomical work. It has been blowing hard from east all night but tonight the wind swung round to N. or N.W. Went out to the boat with Jacob. Evinrude refused and we had a hard job pulling out against the wind the boat being about a mile out in the bay. Jacob went out hunting but only got one small duck. Went out in the early morning to the salt marshes. Shot a Golden Plover and a tern. Bob fixed Evinrude. Raining all night and morning.

Sat. July 23 - Still blowing - slept all day. Up at 8 p.m. Went out to boat to get some things. Changed paper on collections. Skinned the Plover I shot

yesterday. Went out at 10 p.m. to top of island took compass bearings and made sketch of N.E. side of island. Later did "ecology" counting plots to give types of vegetation. Went down to big inlet that almost cuts island in two. Collected some plants. Plenty ptarmigan but no gun. Back at 3.30 a.m. Out again to the marshes to west. Bed at 7.30.

Type of 100 sq. ft. north slope north end of Richardson
Island 100 p.c. cover - 60 p.c. utility.

……

Eriophorum callitrix	1	Carex stylosa	4
Carex scirpoidea	6	Stellaria longipes	7
Luzula nivalis	6	Pirola grandiflora	7
Cassiope tetr.	2	Salix ? glauca	6
Salix reticulata	5	Pedicularis capitata	6
S. Uva-Ursi	6	Cetraria nivalis	2
Ledum decumbens	6	Dactylina ? arct.	5
Vacc. Vitis-Idaea	5	Cetraria islandica	6
Myrtillus ulig.	6	Cladonia amaurocraea	7
Sassurea sp.	6	Alectoria ? nigricans	5
Senecio sp.	6	Mosses	5
Dryas intergrifol.	3		
Cardamine digit.	6		
Polygonum Bistortum	6		

Ground hard, peaty, small tussocks. Rather dry. Frozen in at depth of 12 inches between tussocks. Undersoil sandy loam.

List of vascular plants from north end of Richardson
Island - July 23rd and 24th.

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Sun. July 24 - Left island for fish camp at 7.30 p.m. Weather fine. N.W. breeze. Fish camp at 9.30 p.m. Since Kittigaruit we have used 4½ of gasoline -- 9 gallons which means that we burn almost two gallons per hour and hardly make five miles to the gallon - not so very good! Bishop I.O. Stringer arrived from Aklavik en route for Herschel where he plans on taking the H.B. boat for the east. A strong s.w. came up during the night and prevented the Bishop from leaving. Wrote out a message for the Department to be taken to the island by the Bishop. We had a hard time to make our tent stay and finally had to lower the ridge and weigh it down with logs. Rain.

Mon. July 25 - Wind stronger. Slept all day. Blowing all night.

Tue. July 26 - Wind still blowing hard but went down some in the afternoon. Tried to start but wind came up as soon as we got out of shelter and as the foremost cylinder started to misfire we turned round and tied up again. Strong wind and rain all night. In the early morning we made a short trip down to Kittigaruit to get a few additional supplies and to mail some letters and wire to the Department. During the evening Bob took all the valves out and ground them up.

Wed. July 27 - Bob worked on the engine all day. I went up to next point and collected more plants. Doctored on a native boy who had an accident with his hand. The outwash is continued for about one mile west and then gradually is succeeded by the characteristic transition from wet and tussock through lagoons and more or less salty marshes with profuse Carex, Eriophorum and Arctophila e.c. into the dry semi-tundra. On the land side of the marsh there is generally

a belt of driftwood, probably old as I hardly believe that the sea at present time will ever flood the dunes. The marshes are rather poor in species, I only noticed:-

1. Transition from dunes into marsh.
   Poa ? arctca, Deschampsia ? alpina, Carex incurva, Puccinellia sp. Calamagrostis ? lapp., Parnassia palustris and Kotzebuei, Sagina caespitosa, Stellaria sp. not humifusa, Melandrium ? apetalum, Merckia physodes, Juncus castaneus, J. arcticus, Carex bicolor, Cardamine pratensis (sterile) ? Heleocharis acicularis (sterile) Caltha ? palustris var., Eriophorum Scheuchzeri, Saxifraga Hirculus, Astragalus sp., Equisetum variegatum.

2. Swamps and lagoons:
   Carex ? stans, C. salina, C. ? rotundata, (peduncles rather too long) Caltha pal. var., Ranunculus Pallasii (sterile and does probably not flower) (later note: yes, it does)
   Arctophila effusa (c. fl. but evidently near its northern limit)

Dug up several Leguminosae and found that they all had well developed Mycorrhiza Fewest had the tap rooted Oxytropis species. Behind the bluff facing the sea there is a belt of almost pure Dryas intermixed with Salix and a few Monocotyledones and small patches of fruticose lichens. It is strange to notice that in spite of the fact that everybody states that the season is late most of the plants have gone to seed and many have already scattered the seeds. Of course flowering individual of most can still be found in places where much snow has been accumulated during winter. Such places to some degree resembles the "Urtelis" of Greenland.

Species that have gone to seed.

All species of Salix, Alnus, Merckia, Cerastium alp. Stellaria longipes, Caltha palustris var. Ranunculus cymbalaria, R. hyperboreus and R. pygmaeus, Anemone Richardsonii and parviflora, Pulsatilla, all Drabas, Cardamine digitata, Eutrema Edw., all Potentillas, Rubus Chamaemorus (berries almost ripe) all species of Leguminosae (altho flowers are still to be found together with the almost mature pods) Empetrum nigrum, Epilobium ? lactiflorum, Myrtillus ulig., Andromeda polifol. Rhododendron, Ledum decumbens, Androsace chamaejasme and A. septentrionalis and allies, all Taraxaca, Erigerons.

Thur. July 22 - Blowing and cold and nasty. What a difference from when we came here first! Then it was almost too hot. McAlpine had read 80° the day before and now it is 46 and we are trying to keep the tent and bedding dry by means of the camp stove. Tent is too small for three especially with a stove in. Took a walk inland. Interesting to note how the aspect of vegetation changes but three to four miles from the coast. On hills and hillsides about 50% are lichens and willows and heather grows upright forming a dense brush of one to two feet and in protected places Alnus forms dense copse five to six feet high. Wonderful reindeer range. While Cladonias are very scarce near coast we find here abundance of Cladonia rangiferina and even C. silvatica silv and alpestris are common in places. From my return point about five to six miles from coast I could see extensive copses of alder further inland. As far as I could see same type of rolling country with ridges [illegible] over one hundred feet high and with innumerable lakes, some of them connected and some with swampy patches between them. I think it is possible to portage to the Husky Lakes almost anywhere with a light canoe. Very abundant bird life in complex of lakes where I returned for Ducks and swans both with young. Gulls and terns the latter nesting in colonies. Loons and numerous species of small waders. Lobipes lobatus occurred in swarms

of thousands feeding near the outer border of the Carex and Arctophila. When disturbed alighted in swarms like mosquitoes. Tried to kill single ones for a specimen but could not get close enough and finally fired a shot trying to aim where flock was thinnest and killed thirteen in one shot. Shot one Ereunetes pussillus and an Aegialitis semipalmata with a young in the down still and another of the same family. Back at 3 a.m. and skinned specimens to 9 a.m. Not a very satisfying result when I was through. Saw also one large flock of geese flying south. Wonder if they could possibly be going south or if they just were flying around like the eiderducks do.

Fri. July 29 - Cleared up in the afternoon and wind went down some. Still pretty rough for a boat of our kind but we were rather tired of the fish camp and decided to make a go of it. Bought a bale of dry fish to be cached here together with a box of various specimens. I left both with Pete, who is looking after the dogs and asked him to take them down to the H.B. store at Kittigaruit. Pulled out 8.15 p.m. Warren Point 1 o'clock.

Sat. July 30 - Trouble with the ignition, have been running on the battery but this died without any apparent cause although it had only been used a few days. Tried to locate fault but none evident. Put in one second battery which died in two hours. Managed to keep it going to Atkinson Point on two old cells. Arrived here 8 a.m. anchored on west side and walked across to houses. Went back to boat and took it around to east side. Had to go out four miles to get around sandpit. Good harbour here. Ole Andreasen has not left yet but is going on first fine day. Got a lot of information from him about coast to east. Bought a set of wet batteries. S.W. came up during day with thunder and rain. Water 10.8 C. although ice is visible off the point. Bob went across bay to get fresh water as no water is to be found here.

Sun. July 31 - Thunder and lightning very strong at midnight, the strongest I have ever seen in the Arctic. When the flash came the interior of our tent was quite illuminated but with a more reddish glare than I have ever noticed outside. Heavy rain.

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Mon. Aug. 1 - Wind strong still but went down during the day. Ice is getting pretty close and in the evening a fog came up. Drizzling all day. Went out on a trip over the salt marshes that extend for about a mile inland with gradual transition into the ordinary tundra type. Salt marshes are frequently flooded and full of brackish ponds and a few humps sticking up over the low uniform bottom. Jacob went out several times during the day trying to get some game, but came back with nothing. There is all kinds of ducks around so I went with him in the evening taking the canoe. Followed the bay a couple of miles and got eight ducks and a loon (Gavia immer). Saw some geese but they are even harder than the ducks to get close to.

Tue. Aug. 2 - Fine and calm. Dried felt papers and changed papers on the now quite copious collection. Also our bedding and tent needed drying. Took observations for latitude. The accuracy, however, I'm afraid is not very good, as both my instruments are badly out of adjustment. Saw five schooners going west for Herschel. Ole Andreasen left in his big schooner for the same place. Went out photographing plants. Took a short swim in the sea. Although the ice is quite close the water was not too cold for a short plunge. Bob went for water and has been fixing up six big batteries that we bought from Ole Andreasen. One schooner came in from west bound for Baillie Island and one from said place going west. Collecting, etc. Today we have been feasting on fresh meat - the first we have had for a very long time. Glass - 30.

Wed. Aug. 3 - Atkinson Point - Fresh wind from N.E. too strong for travelling. Glass down to 28.8 and dropped another tenth during day. Clear. Saw S/S "Baychimo" passing last night. She was going very slow about eight miles off coast and is probably forcing her way through the ice. Went out in canoe trying to get some more ducks but had to return, sea too rough. Shot a loon (Gavia arctica). Went out in afternoon and collected some shore birds and skinned some for specimens. Bob made long trip inland and brought back an interesting addition to our collection from this place. Jacob and I went after water. Went out to sandspit in the evening. Ducks are passing close here right along only now of course none came and after a while I returned to the tent. Changed papers on the collections.

Thur. Aug. 4 - Still blowing from N.E. Overcast. Funny to walk around here on this place that seems to be a favourite summer camp. One or two families besides Ole Andreasen lives here permanently. These people have too much easy cash. All over the country you find guns, sewing machines, phonographs and clothing thrown away either because the owner had no immediate use for it or because something in the mechanism was broken. One man on the schooner that came in yesterday told me that he owned some reindeer in Alaska. Five years ago some promoter had told him about reindeer and that he ought to get some and that the Government was going to take some in directly and the man bought two or three for cash paying $25.00 apiece. In the afternoon Bob and I started out for a "Pingo" that looked to be three or four miles inland. It was however a good deal more than that, probably seven or eight miles and long detours had to be made often on account of numerous lakes and swamps. About three miles from sea the vegetation gradually changed into a rather dry tundra with numerous water holes and small lakes. About five miles from coast the vegetation began to appear more luxuriant and Salix began to grow upright to about 1½ feet. Several large lakes seen in continuation of MacKinley Bay. From Pingo we could see hills, probably on other side of the Husky Lakes. From the head of Mackinley Bay I think there is a practicable portage in to the lakes. Some ptarmigan seen also ducks, loons and two large geese. On one of the big lakes saw two couple of swans. All kinds of small waders. Killed four ptarmigan, a loon and a duck. Beastly cold and at times foggy. Wind hauled round through N. to N.W. Our trip added about twenty new species to our list of local flora now counting about 150 species. Lichens are fairly abundant but only six or seven miles from coast the fruticose species are of any importance. As summer reindeer country this ranks with the best. Everywhere the ground is 100% covered and species of high utility as Eriophorae, Betula, Puccinellia, Poa, Festuca, Carices, sage a.o. are very abundant. Banded lappland longspur, juv. 19152. Also juvenile Pisobia maculata - 19145.

Fri. Aug. 5 - Snowing all day. Still blowing from N.W. Did some triangulation to find the distance to the pingo where we went yesterday. Established two base lines. Had to interrupt the work for a couple of hours because of snow. Bob changed paper and took out dry specimens. Everything up to this place is now dry and packed up for cacheing here. Quite a good sized collection already. Probably over 1000 herbarium specimens. Air plus 3° C. Water 7.5° C.

Sat. Aug. 6 - Fine with a breeze from South. The water buckets were ice-covered this morning! Broke camp and were off at 9.30 a.m. (about 7.30 mean local time). The two schooners bound for Baillie Island followed. Passed two houses at "Seal Bay" this side Cape Brown 11.30. Saw several seals (the first observed) and some belugas. As the weather was fine we did not attempt the inside passage here but held well out following the shoal that here runs way out to sea. Stuck once but afloat again. The ice is close here and we had to find our way between or sometimes behind the stranded ice. More than six miles off shore we only had about three or four feet of water and had to slow down several times. Abreast of Cape Brown

loose. Wind was coming up and hauled round towards north. Held a little more East. Continued trouble. Tried the new batteries we got from Ole Andreasen only to find that there wasn't any juice at all. There is a very strong current running east and with wind against it got pretty rough at places. Felt our way along the shores with the bamboo pole till we came to the Dalhousie entrance, which is very hard to find. At Peterson's house there is good shelter and about two fathoms of water in the channel. The two native schooners were a little ahead of us and stopped here for the night too. When we got in they had killed a bunch of brants near the house. They made us a present of two which along with a loon I killed the other day made us a square meal.

Sun. Aug. 7 - Blowing hard all night and raining sometimes too. Had a good sleep! Went out in the afternoon to have a look at the landscape. Flora quite interesting. Funny to notice how the flora gradually become more and more "arctic". Some types drop~~s~~ out every stop we make and new ones comes in. Here for instance we did not see: Myrtillus, Vaccin, Vitis, Rhododendron, Tofieldia, Ledum. -. Saw one bunch of geese but they were too far away to get within range. As nothing better was on hand I killed six glaucous gulls. There is lots of meat on them but as these were adults, they were somewhat tough. Bob changed papers on collections and worked on the magneto problem that I'm getting afraid shall become disastrous. Water very low and we cannot take the boat up yet. The influence of the Mackenzie still very marked. I have been taking the temperature daily and found as follows: In delta proper: July 17 - 20.5°C. Fish camp 4 miles east of Kittigaruit 15 (fresh) North end of Richardson Island brackish 14.5 - Atkinson Point (McKinley Bay) August 1 - 10.8 - after three days blowing of N.W. Aug. 5 - 7.5 - Cape Dalhousie, 2 days east wind, but ice in sight Aug. 7 - 8.00 - At Warren Pt. the water is almost undrinkable and here it is very briny.

Citillus Parryi

L 38 T 11 H.F. 6.5
36 10.5 - 5.5

(The bulbils of Polygonum vivip formed the bulk of what these two specimens had been eating).

This species is very abundant on the sand bluffs and old dunes in this country. They are trapped for food for dogs and man. Are said to be very fat and palatable early in the fall.
Type: Undulated overgrown dunes with intervening low swamps with lakes and lagoons. The soil everywhere saline or alkaline. high cutbanks, about twenty feet above present sea level.

Mon. Aug. 8 - Blowing hard N.W. We pulled the boat in at high water in order to examine the propeller. Various trips around. I went to other side of the ? island with Jacob in search of my knife that I lost yesterday. Between us with one gun and nine shells we got eight brant, seven ducks, Pintail males and two ptarmigan. We, that is Jacob refuses, have been eating seagulls all day. At ebb we had the propeller dry but found nothing wrong here.

Fresh water is a hard problem on this coast. There is no fresh water lakes around here and since the one lake at Atkinson we have had no fresh water since the river. The best we can get here is absolutely undrinkable unboiled and in a cup of water one can count four or five species of Crustacea without a lens and even in coffee the salt taste is quite acute.

Tues. Aug. 9 - Bob worked all day on the magneto with little or no success. The rest of already once discharged dry cells may take us to Baillie or may not - it all depends on what luck we have. At Baillie we may get a new magneto if not we

shall either have to give up the rest of the summer's program or else get another boat. The magneto trouble is very puzzling. Gus took it apart before we left and declared it to be o.k. The first day it was, but ever since there has been trouble and it will only give enough spark when the engine runs empty and makes about twice the normal number of revolutions. There seems to be some kind of leak or contact somewhere the way our two new hot shot batteries were killed in no time. Only we cannot find just where the trouble is and I doubt if it can be located without an electrician's outfit. The two husky schooners are bound for Baillie too and have been unloading their supplies for the winter today. Quite a grub stake for a native. They evidently depend very little on the country except for fur and have even provided for dog feed from the stores in form of flour, etc. It is hard to see what these people would do if there were no foxes or rather what they shall depend on after the foxes have been depleted - a calamity that I am afraid is not very distant. On the north coast of Alaska practically every fox den is known by some trapper and as the fox cannot breed out on the ice, the trappers will have to depend on foxes from other places as very few will have a chance to breed on that coast. Here of course it is somewhat different as the island supplies a large and partly undisturbed sanctuary for the white fox. Still when the entire population of native and whites exclusively live on the fox it may become serious soon. The trappings pays so well now that a native can afford to pay $35. for a skin of seal oil (8 to 10 gallons) and water boots are valued at $20. (all on this coast). This is not because seals are scarce but because nobody hunts them as they can afford to lay off when the season is closed and because it pays better to trap when it is open. The wind is blowing with undiminished force.

Wed. Aug. 10 - Overcast, wind as usual. Glass down to 29.8. Water 8.4°C. Trip to other side of strait. Practically same country and vegetation. Shot seven ptarmigan. These are already ~~in~~ beginning to moult. - . Found a small lake with fresh water. This is in the very same level as the numerous briny lakes and ponds around it and I cannot in any way account for the freshness of its water. All these lakes appear/ to be formed by the breaking down of ancient frost cracks of the "polygon field". There seems to be kind of cycle in the topographical features of the tundra. To begin with it was all uniform mud or sandflats when left by the sea. During early frost action the top soil was divided up in the characteristic polygonal structure. The vegetation entered and along the edges of the fissures found better conditions than otherwise. This combined with the raising action of the ice penetrating the fissures in the summer in form of water raised the edges of the polygons to low ridges. The centre of the polygonal blocks accumulate water from the melting snow and ice and are generally swampy, at least in spring and early summer. Sometimes, if the surface of the country favours it, water will accumulate in the fissure too, and the ground ice that I think here is eliminated to non extensive wedges just under the crevice and the ice and the frozen edges deteriorate and gradually transform the crevice into a pond and thus destructs the polygonal blocks. I am not sure if this is the general rule or if the well, established polygonal fields are the first form. Very little actual ground ice have been seen.

Thur. Aug. 11 - Blowing and overcast. A short trip to north end of the land. Studied and examined several species as Papaver , Sax. Hirculus, Arenaria, Agropyron, Poa and [illegible]. Collected some seed samples of Papaver for Dr. Malte. Although Papaver is quite abundant here very few are maturing seed. All seems to come to flower but although the sexual organs are present and apparently normally developed they are abortive and wither soon after flowering. Some succeed in developing a capsule but it deteriorates or misdevelops and no seeds are reproduced. In the evening we started out to investigate the sound by which we should have entered from McKinley Bay. We got the Evinrude rigged up only to find that the propeller shaft had worked loose. The strong current and wind had blown us half a mile down before we could make a landing and we had to line it back to get tools.

When finally the engine was assembled again it was nearly dark but as we were determined to do something, we nevertheless set out again two or three miles down. Made a landing on small island but having not brought a flashlight we wouldn't see much. When we got back the engine was too cold for starting and after about an hour's work and heating with alcohol and innumerable spinnings of the fly wheel it finally kicked off and we managed to get back without using the line. Wet and cold we were and it began raining soon after we got back.

Fri. Aug. 12 - Heavy rain all night. Strong wind also. Tent pole broke. Water blowing through the tent wall makes everything sloppy. Tried to sleep the day away. Bob not well. Jacob went out hunting and killed five brant. Rain abated during day in evening started again. Wind the same.

Sat. Aug. 13 - Heavy, continuous rain all night. Everything is getting wet - the ground under the tent too. Rain stopped about 5 p.m. and wind gradually went down. Thick fog. Barometer down to 29.5. At 8 p.m. a faint breeze from West. Bob wants to go but I don't like the idea with the engine so undependable. None of the huskies want to go either. I discussed the probability of chartering one of the schooners. This would save us going to Baillie Island and the boat being all decked we would be most independable of weather conditions. In that case we should leave the Elsie here and order new batteries from Baillie Island to take us back to the delta when we come out from the lakes. Personally I think an arrangement of this kind would be wholly justified as that would give us some chance to finish the proposed work of this summer. The engine trouble really has not delayed us any yet as the weather has been so bad that even an ordinary sea-going schooner could not have made better progress. But even if we could make Baillie Island by our own power and get new batteries the odds would be too large for getting stuck in the lakes and probably might compel us to leave the boat and collections and other outfit. Unless we could bring the boat out next winter by dog team we should lose the boat and be compelled to pay the balance on the boat too.

Sun. Aug. 14 - Wind from West fresh thick fog. Tried to lift at noon but could not make it. Made definite arrangements with Allan to use his schooner "Flying Cloud" for the trip to the lakes and Anderson River. Basis $10. a day exclusive of oil and gasoline on the condition that we take himself and his family and dogs etc., down to a fish place on "Nicholson Island". I think we will postpone the trip to Baillie. Wrote a letter to the Police asking them to get us some batteries from the H.B. While Allan is going to fish the other schooner with his boys are going to Baillie and can take the batteries back. We intended to take the Elsie round to the inside and better sheltered harbour. Going round the point the canoe got swamped and the Evinrude pretty near was lost. We managed to salvage all the stuff except one vasculum that sank before we could get to it. We searched for it on the bottom for over an hour but although the water is shallow we could not find it. I suppose it must have been carried out to deep water by the rather swift current. In the evening we transferred all our stuff to the new boat. The engine seems to be in fine condition and so is the boat. I am satisfied that we shall be able to get our work finished if we only get a fair chance with the weather. The wind is pretty strong and the owner is not keen on leaving on a Sunday. I do not want to make a point of leaving too late anyhow as the few hours we would gain hardly would be the $10's worth. I drew up a formal contract with Allan. Now for a good start tomorrow. In the evening we went over to the place where the vasculum was lost, but although the water is much lower now, no trace of the thing could be found. We spent a couple of hours wading around and finally gave it up. Glass is raising - 29.8 at midnight.

Mon. Aug. 15 - Couldn't sleep so I rose at 5.30 a.m. and took a walk down to the point. No trace of vasculum. Almost calm and clearing up fine. We got busy and tried to get off early but the water was too low and the boat cannot get out.

Full moon yesterday. A couple of showers at noon. Finally water was high enough at 2.30 p.m. "Bluenose" is going to Baillie. We followed her out through the very narrow and winding channel and although they know the channel we both got stuck twice. Once we got sand in water intake and had to stop and clean. Outside the sandpit at 3.30 p.m. Saw Nicholson Island and set course E. by S. later changed to E. by N. when we struck bottom on a shore two miles off the east coast near the north side of the Husky Lakes entrance after this shoal deep water till about half a mile of the "island" five fathoms and no bottom. The north side of the entrance on our beam at 5 p.m. and anchored about half a mile inside the west part of "Nicholson Island" at 8 p.m. Went ashore in the evening. Back at 12 p.m. very low water. Jacob killed five ptarmigan. Mouth of entrance water 7° C - air 7° 6 p.m.

(List of Plants on Nicholson Island - August 16th).

Tues. Aug. 16 - Trip all over island. From highest point 240 feet (300 feet further west) bearing and sketch of surroundings. Could see way up the Anderson River. Collected a good deal of vascular plants and lichens. Hills and ridges, no rock exposures gravel and boulders of granite and limestone. Formation probably morainic. Back to boat at 3 p.m. Very high water. Anchored canoe and had to wade out to get it through surf and got wet. Light east breeze died later. Started 5.10 p.m. set sail but took this down after an hour. Shoal at right angle at first point No. 148. Followed mainland side S.by E.

Wed. Aug. 17 - Set watch at 11 p.m. Bob first. At 11.30 passed next point (149) here another shoal, 4 ft. changed course to S.E. by S. and at 2 again to S.E.[illegible] . Stopped at 5 a.m. Water getting shallow. Less than 5 fathoms, after pt. 149. Here about 2½ fathoms, muddy. Current outgoing about 1½ miles. Went ashore and climbed cutbank and tried to locate opening. We left canoe unanchored to find it adrift way out when we descended. Bob had to wade out to get it this time. Took bearings and made sketch. Course for supposed opening, S.W. by S. Start 5.10. A shoal from the river to south west almost closed the entrance after entering found a labyrinth of channels and islands. Kept to right. Some places narrow but deep. Several soundings mostly between 5 and 10 fathoms but occasionally 15 fathoms once as much as 39 fathoms! Entered big lake at 8.20 a.m. Weather fine and calm. Stopped at noon and went ashore for latitudes but sun was obscured just when needed and had culminated when it got it. Saw two cranes and bear track and den from last winter. No wood of any kind. Many of the cutbanks show magnificent exposures of ice and very considerable slumping or Solifluction takes place. In some places the hills are formed of sand and gravel which is overlaying the clay or mud. I think the formation is glacial moraine deposited on the sea bottom. Many fossils (mollusks) were seen but are broken pieces probably carried with the glacier. Start again 1.30 p.m. 2.30 p.m. water 8° C. 4.30 p.m. entrance to next lake water 12° - air 17.6°C. General course afternoon E.S.E. and S.E. by S. Followed left side and ran into blind pocket. Trip ashore. Saw first spruce. Out again. Thunder and heavy rain in showers. Followed left side out and at dark found river with swift water. Anchored here for the night. Expecting it to be entrance to next lake. Water 12° still salty. Bob killed two anser albifrons. I killed 3 old squaws.

Thur. Aug. 18 - Fine in the morning. Went ashore for latitude. The river is very short and runs into lake. Farther north there is a larger river to the same lake. Left 12.30 p.m. and followed narrow lake about due S about four to five miles then sharp turn to West. Here almost barred by long sandpit. Here old camps and lots of drift logs. Stopped and picked some wood. No fresh water. Water 12.5°C. After rounding sandpit kept too much to left and went aground on shoal. We put anchors out and finally after a good deal of wading and pushing got it off. Strong wind came up from North. Set sail and stopped at 6 p.m. for the

night. Boh and Jacob went ashore. I started washing myself and my clothes. Found out last night that I was full of lice. I think I collected over 60 big fat specimens. "Fly-tox'ed" all the bedding and whole interior of boat.

Fri. Aug. 19 - Fine light north wind, cold. Tried to get latitude but sun obscured and I wasn't sure that I got the transit. Went ashore all of us. Jacon to get water and look for five ducks he shot last night without getting. Went to other side of peninsula and took bearings. Boh succeeded in getting quite a collection from here. Collected some large fresh water Crustaceae about 1 to 2 inches long. Peculiar is the way they swim on the back. Weighed anchor at 4 p.m. and followed narrow arm that finally turned into swift watered river. Current about four miles. Water 2 to 4 fathoms, river forked and west fork entered lake-like opening. We took narrow fork with little current to investigate beacon on right hand side. Stopped here and climbed hill. Beacon evidently of ancient date. Possibly shooting fence or shelter. Got an idea of lay of the lakes. Took several bearings and returned to boat. River presently emerged into lake turned right. Killed 4 swans for meat. Very few ducks seen lately. Jacob only found three of the five. The swans are very abundant, probably the most common bird but hard to get close to. These three were shot with rifle and only one with shotgun. Continued till 10 p.m. when it was too dark to see much. Anchored on south side of lake. Spruce is fairly abundant on both sides of the river we ascended today, but only six to eight inches and generally low and straggling. All low land is either lakes or swamps. Hillsides facing south are now densely covered with alder while the flat tops carry a profuse growth of heather, Arctostaphylos, Ledum, Rosa, Salix, Rhododendron, Vaccin-Vitis Myrtillus, intermixed with Carices (C. stylaris C. scirpoides) (Cal. sp. Luz. spicata and conf.) and in places abundance of Cladonias and moss. Especially the muck seems to be able to support the best Ericacea cover.

Sat. Aug. 20 - Woke up by the rolling of the boat and found that the anchor had dragged over the precipice-like edge of the coastal shelf where we had anchored on two fathoms. We were now a couple of miles off the coast. Started and went back to same place. Saw a grizzly sitting on top of the cutbank. We all went in the canoe intending to give it a chase but Mr. Bear beat it before we got up to the place through dense bush. After a couple of hours search we returned to the boat. I went up the hill to get a view of the lake but couldn't see anything. Started at 1.00 p.m. A couple of miles up I could see the tracks of the bear over a cutbank and presently I saw the bear lying down eating berries. We stopped and went in the canoe again. This time the bear which turned out to be an old female was more disposed for a meeting and came down to meet us. It walked quite placidly down the hill and came in a slow gait along the beach towards us. I took a photo on about thirty yards before we opened fire. It was rather a sorry-looking thing when we got it towed out and hauled on deck. Surprisingly small for an old bear and nearly toothless. Started again and stopped in the afternoon at 5 o'clock and went ashore for two hours. Took the dogs along to give them some exercise. Spruce six to eight inches in protected places. All southern exposures are covered with dense scrub of willows and alders with a dense undergrowth of Eleagnus, Rhodoendron, Ledum pal. and groenl, Vaccin.and Myrtillus not to forget the red and blackberried Arctostophylos and Ribes. Very gradually southern types comes in and the northern types drop out. Of the latter group I noticed the absence of Luz. nivalis, Cass. tetr., Sax. groenl and opp., Andros. chamaejasme. Lots of ptarmigan. Had one swan for dinner. Meat fine and enough for three. Started again at 6.45 and continued through a fairly narrow straight lake till 8 p.m. Went ashore and climbed a hill but couldn't see much. Bob set a fish net. Passed a patch of about twenty acres of dense tall spruce, probably about ten inches. Good for building purposes. Water is drinkable but I can still taste salt! Bear measured: L. 5 f - T. 3", H.F. 11.5".

Sun. Aug. 21 - Noon - water 12.2°C. - Air 18.°C. Started after taking latitude and azimuth followed lake for a couple of hours and then ascended small river with four to five miles current. River five to six feet and only fifty to sixty feet wide. Some of the sharp bends were rather difficult to make. Saw a pair of swans with a young in the down. The adults couldn't fly and we chased them all the way up the river while the young took refuge to the willows. Got a couple of close pictures of the adults. After emerging into what no doubt is Setidgi Lake we stopped for two hours on a small island for dinner and later went ashore for collecting. Island is low with few stunted spruce and a few alders and willows. In places there is a 75% of Cladonia rangiferina and Cl. Alpestris. Several interesting aquatic plants were collected in small pond. The island is inhabited by numerous herring gull nesting there. Tried to catch some young ones for banding but no success. Today and yesterday we have seen numerous large grasshoppers also dragon flies. The blackflies are a pest now too. This morning Bob caught one trout, 3 whitefish and 3 "crooked backs" in the nets. The largest whitefish probably were five to six pounds. Continued to the S.E. side of the lake where we stopped at 7 p.m. Bob set nets again. I plotted map of the lakes and Liverpool Bay. Even if I have missed a lot of details especially in the larger lakes I shall by the time we get out have a fairly correct map of the lakes and hope to connect with the map I made this spring of Campbell Lake and vicinity.

Mon. Aug. 22 - Water 14.8 at noon. Air 17.2. Fine and calm. Distant thunder. Photographed lichens and other things. Took latitude and azimuth. Crossed low benchland and ascended hills running parallel to lake. From the effort required to do this I should have guessed at several thousand feet elevation but aneroid only registered 520 feet. From here rolling partly timbered country as far as I could see. Black and white spruce mostly dwarfed and low where the ground is cold and wet. On dry sandy ridges good size up to 14 feet white spruce. Magnificent lichen cover over vast areas 50 to 80% pure lichen. Cladonia rangiferina and Cl. silv. silv. and Cl. uncinalis, Cl. alpestris, Cetr. niv. and many others. Cladonia rangiferina and Cl. silv. probably covers more ground than all the rest together. Some places Cladonia rangiferina quite pure formed uniform cover 14" thick resting direct on frozen ground. Lower eight to nine inches all decayed but plants still growing terminally. Spruce nowhere dense and everywhere with profuse undergrowth of Betula gland. Ledum, Myrtill. species and Vaccin. Vitis / with lichens between. This lake would be ideal location for winter reindeer camp.

Flies terrible. Very hot and calm. Descended and back to boat 6.30. Started for end of lake. Came to river draining the portage (Campbell) between Gull Lake and Setidgi at 7.30 and after some search found a three foot channel over bar and entered river. Here six to seven feet of water. Ascended two miles and stopped for night. Rain in evening. Heard beaver at night. Jacob skinned bear. Only my last shot hit her right through shoulder and heart. All the rest of them (we fired about ten altogether) had missed.

Tues. Aug. 23 - Raining heavy all night and day. Air 14.2 - Water 12.2. Went short distance up river but had to turn back. River too shallow. Anchored in Pond Lily Creek. Cleaned the cranium of the bear. In the afternoon rain stopped. Jacob and I went up in the creek about five miles in the canoe. Very slow current fairly wide with birch and willows overhanging. At places almost closed by aquatic plants (pond lilies and Sparganiums and Potamogetons). Saw several rats and numerous tracks of a couple of moose that evidently lives around this place. Also several beaver tracks and one dam. Tried to get an idea of the country by climbing a spruce tree but couldn't see anything. This area has been burned off by some fire that swept the Gull Lake country probably fifty or more years ago. Interesting is to see how the useful lichens destroyed by the fire are replaced by species of little forage value, mostly of the Stereocaulon and

Cl. fimbriata type. This type will probably some time be succeeded by the Cladonia rangiferina and Cl. silv. and alpestris formation that in some places especially in the thickets are getting foothold. Bob changed papers and took out dry specimens. We have several thousand herbarium species already.

Wed. Aug. 24 - Fine day. Observations for latitude. Made ready to trip up the Main creek. Left at 12.45 p.m. Went with the canoe using the Evinrude about 5 miles from our "Pond Lily Creek". The river forks, one muddy, trends towards the valley in the hills to the right while the left fork has clear water and is what we expected to be the river we found on the spring trip draining to the Setidgi. We took this one. Several jams and many obstructions from dead logs, etc. Engine refused work at 5. Stopped for supper. Climbed tall spruce and took a series of bearings and some photos. Off again at 7 p.m. using the paddles. Current getting very swift and we had 3 hours of very hard work to get to the place where I hung up half of my old kerchief this spring. By then it was almost dark. I saw several beavers and numerous moose tracks. No Nympha in this creek. Made a fire and tried to sleep. We did not expect to stay out as we did not not bring any tent or blankets.

Thur. Aug. 25 - Overcast and windy. N. started back at 5.20 a.m. paddling hard were back to the forks in 3 hours. Probably 15 - 18 miles. Back at boat 10.15. Drew up a sketch from my bearings from this spring from Campbell Lake and the portage and tried to work them into those from this trip. Slept.

Fri. Aug. 26 - Fair. Start back 11.00 a.m. Stuck on the river for about ½ hour. Entered lake 12.30. Course for outlet approximately 335. I killed 5 Canada geese going down the river. 3 were young ones still unable to fly. Only slightly smaller than the adults. Entered outlet river 3.05. Out 3.35. Stopped for supper and to get wood. Left 4.45. Course right to first point back 80. (260) N.W. 235 277 - 5.40-Went south, set sail and made fairly good speed. Following left side and stopped at 8 a.m. for the night. Killed another goose. Bob set net. Did not feel well today. When pushing on boat 2 days ago I think I strained one of the adhesions from the spring illness and have had some pain today.

Plant list from Setedgi Lake
(Island, south side and river and creeks on the portage)
August, 1927.

Saturday Aug. 27 - Wind changed to N. Foggy and rain all day. I'm worse today and kept the berth most of the time. Start at 11.30 went N - NW in search of another inlet to this lake. Numerous islands cutbanks, ground ice. Bob caught a large trout and 5 white fish - all very large. Tanks S.B. 2½ B.B. 4¾. Stopped at 7.30 p.m. beginning snow . We are lost and do not know exactly where we are. Bob thinks magnetic disturbance reason. He set net and half hour later took out 5 white fish.

Sun. Aug. 26 - Nasty and cold but fairly dry. I am the same - not worse - no temperature. Kept bed as much as possible. Bob caught 14 whitefish and a trout besides the five yesterday. We went south looking for outlet all day. Went into numerous pockets and finally at 4 p.m. started back to try again. Went from N - N.W. Passed a ruin of old igloo. Remarkably close to water line below cutbank. Probably place Stefansson visited in 1905-6 in the S.E. pocket of what he calls 2nd Eskimo Lake. Finally going N. once more found the outlet and anchored at the entrance, to next lake, same place as we were last time. Bob set

nets.

Mon. Aug. 29 - Bob had big catch. 5 trout - two of about 25 - 35 lbs. and 9 crookedbacks and one whitefish and 6 bullheads. Start at 10.15. I am no worse - no fever but pain when I am not in bed. Failed to get the outlet and had to go back a few miles - at outlet 1.55. Weather cold, almost calm, not quite clear. Air 1.8 degrees, Water 9.0 degrees C. Stopped from 3 - 4 p.m. to pick up wood in narrow before river. Entered river 4.50 out. Stopped for night on west side of island in the last and largest lake at 8.30. Heavy rain all night.

Tues. Aug. 30 - Bob had a big catch of fish; 30 flounder, 19 crookedbacks, 5 whitefish, one trout and one bullhead. Funny the way it runs. This is the first place he got any flounder. Last place was first place he got many bullheads - in fact first place we have seen them. The crookedback and whitefish seems to be the standby. One thing is however pretty safe to say, that almost any place on the lakes especially towards the entrance a man could easily with 5 - 6 nets in very short time provide for a whole winter's dog feed. It would not be necessary to dry any at all. Natural icehouse is very easily made in almost any place and the abundance of lichens so easily gathered would provide a splendid insulation for the roof. This would, of course, be of importance for a future reindeer industry. As the E.L. country would be the winter range, at least the south side, while the peninsula towards the sea would provide summer forage. Start at 9.30. Weather improving and sunshine at noon. My condition is practically unchanged. Tried to keep the bed as much as possible. Lost about 3 hours running into blind pockets and the west side of lake. Entered outlet 5 p.m. strong outgoing currents. First medusae seen this afternoon. Out in the inlet at 7.20 course for Pingo Island on the north side. In the dark we got caught in pocket or inlet to the left. Possibly the double inlet to the lakes shown on the map. Went out again and continued till 10 p.m. when almost entirely dark. Anchored on east side. Snowing in the afternoon.

Wed. Aug. 31 - Wind from north. During the night the anchor had dragged due to very strong current and the fish net set near the boat was lost. Started at 8 a.m. at 10.00 we had to turn because the wind or rather the sea was so rough/due to the current that we could not advance. At this point there evidently is a bar running far out. Only little shelter behind the point. Bob went ashore for wood and water A delay here probably means that we shall have no hope of getting back to Aklavik in time for me to catch last boat if malady gets worse. I had hoped to be able to go out and get fixed up by a real Doctor. Raining all night and all day. At midnight the wind went down.

Thurs. Sept. 1 - Father's birthday. Early in the morning the wind that had been gradually going down switched round to west or what they call southwest, on the coast. It increased rapidly in force and when we started at 9.15 we had all I care for. We headed for the other side and set one sail too steady. Tried to use the centerboard but I am afraid it got bent by the violent movements of the boat. We could not pull it up again. This will be bad when we shall try to get Dalhousie harbour. Following the west side of the inlet. Struck bottom on shoal and probably broke off the lower part of centreboard. Rain and fog and strong wind Finally rounded the cape and got into Dalhousi at 3.30 p.m. Before we got into harbour it was almost dark and we got stuck in the entrance.

Fri. Sept. 2 - Water rising and at 2 a.m. the boat afloat and drifted across harbour. We had to put out an anchor and pull it off and anchor in inner harbour. Cleaned the boat up - replaced the gasoline. The Husky lake trip thus took us 10½ case gasoline - 90 gallons. Wind from N.W. - foggy. The "Bluenose" has not got back yet with our spare batteries.

We could have left but the "Bluenose" is due any time and

we do not feel like taking chances on the wet batteries, though it runs fine on it only there is no telling of how long. Bob had the "Elsie" ready for an early start. I am not any better and had fever last night. "Bluenose" and a "schooner" bound for Atkinson Point pulled in at 8 p.m. and brought in a letter from R.C.M.P. Baillie saying that they could get us no batteries. Sounds funny to me now after the Baychimo and all the traders have passed so recently. Now we have to try with the one we have.

Sat. Sept. 3 - Wind somewhat stronger. We were up early and ready to start at 9 but water was too low and we werestuck 2 hours in the entrance before we got out. Outside spit at 11.15. Heavy swell outside although wind was not very strong. Followed the "Bonnie Belle" bound for Atkinson Point. One of dogs fell over the side but fortunately chain and collar held or we would have lost him. Soon after we got out from the island before [illegible] engine stopped. Had been having some trouble with the lubricating system. The "Bonnie·Belle" stood by and gave us a line when they saw we were stuck. Swells getting heavier and line broke once. Once canoe got swamped but we had prepared for this and taken everything out this time. We managed to hoist it up on the deck of the schooner. After the line broke they had to slow down a little. Anchor at Atkinson at 6.30 p.m. Bob had made arrangements with the owner of B.B.'s so they should tow us up to Kittigazuit tomorrow.

Sun. Sept. 4 - Weather fine. Wind a little more east - not so strong. Ready to leave at nine but as always happens with these people, this morning, a family that had planned on wintering here, made up their minds to return to Tuktuayaktoq. The owner of the boat had given their consent but before the fellow had got his dogs and fish nets, and the hundred odds and ends out it was 11 so I kind of doubt that we make Kittigazuit today. Water - Waren Point 2 degrees C. Tapqaq - 5 degrees C. Took one hour to end of sandspit. After turn set sail and made good time. Heavy swell at Warren Point 5 p.m. Tapqaq 7 p.m. Tuktuayaktoq at 9 p.m. Visited with the "chief" William in evening.

Mon. Sept. 5 - Another fine day. It was noon before the boat was unloaded and even then we had to press the point to make the boat owner go on. "He had not visited his uncle yet" he insisted, but finally consented to put it off till he returned from Kittigazuit. At 3.30 p.m. landed at Kittigazuit to find McAlpine gone. He left for Aklavik on 1st. A note he had left informed me that the boat would be in on the 5th and he expected to be back on 7th or 8th. His housekeeper is living in the house so we moved up too and when I found a well supplied First Aid chest I fixed myself up as best I could and went to bed to wait for McAlpine to come back. Tried to persuade the Bonnie Belle to go on to Aklavik but it was too late in the season. Paid Bob Cockny off in the evening mostly in trade for boat and crew. $15.00 per day for the boat plus gas and oil, also for return and $5.00 per day for owner and crew - 3 all told.

Tue. Sept. 6 - Kept the bed.

Wed. Sept. 7 - Kept the bed.

Thur. Sept. 8 - Fine day. McAlpine returned from Aklavik and reported that the Liard had been delayed and would not be in till 15th. He fortunately could not wait longer and had returned. Same afternoon a white man pulled in in schooner. They left Baillie Island on August 5th bound for delta and explained that in spite of their boat being all decked over they had not been able to make better time owing to constant bad weather. I don't think they are very experienced in the art of sailors, but still it shows that weather conditions have been pretty adverse this summer. They came from Cape Parry where they put in last winter trapping. Mr. McAlpine could not take us up to Aklavik as he had to get busy fishing and could not spare his pilot either, but after some discussion he agreed to let us

charter the boat on the condition that Bob brought it back. The Police are sending a boat down here next week and Bob can get back with that or take the canoe if necessary. We have a new Evinrude in Aklavik I presume. This arrangement, besides enabling us to take our boat up also gives us a chance to catch the Liard in case the Doctor thinks it unwise for me to stay in this winter. I was glad to learn that Mr. McDougal is still in Aklavik waiting for the Liard too. We secured a native boy who is well acquainted with the delta. For the boat we shall pay $10. per day and gas and oil. We made ready to leave in the morning. Water 8.2 C at limit of timber which is very sharp here and the left side, high cut banks. Took several photos.

Fri. Sept. 9 - A howling snowstorm all night. ½ foot snow this morning. Cleared up in the afternoon. Left at 5.30 p.m. Bound for Pete Stromberg's place about 15 - 20 miles up river where we pick up our dogs. Lost about ¾ hour looking for the channel a few miles from Kittigazuit and arrived at Pete's place at 9.30.

Sat. Sept. 10 - Fine day but with fog till about noon. Pilot is taking us another way following east channel - above Tumuneq. Took a series of photos of the Caribou Hill formation of the east branch above and below the timberline. Snowing in the afternoon. Anchored in small river west of the middle channel. As far as I can make out we followed the steamboat channel as far as the junction with the "middle" channel and from here we took a cutoff toward the Aklavik channel.

Sun. Sept. 11 - Snowing and blowing from north. Started at 8 and arrived without incident at Aklavik at 2 p.m. Unloaded the boat partially. All our stores had arrived on the second boat and the house is filled up with stuff. There was a bunch of mail and some telegrams too. Met the new Dr. Ward and made an appointment with him in the morning.

Mon. Sept. 12 - Blowing hard from north. Doctor thinks that I can stay in safely. Since Kittigazuit I have been improving daily. I had a long talk with Mr. McDougal who is here waiting for the boat and made up my mind, encouraged by him also, to stay in. Doctor wants me to take a hospital treatment at once, but I cannot see any way to do so till Bob is back from Kittigazuit, after having brought Mr. McAlpine's boat back. Started making out my expense account. Wired the Department.

Tue. Sept. 13 - Still blowing hard. Wrote letters. Bob got ready to return as soon as wind goes down. He is taking the canoe and the new Evinrude for the return. We heard from Simpson that the Distributor on her way back from Norman has passed Liard laid up on the second day on account of the storm and that it cannot be up here till Saturday. Wind went down in the evening and Bob left for Kittigazuit. I cannot do much myself but manage to look after the fish net and the dogs. The returns from the fishing is poor and I have to cook besides to feed the 17 dogs. The mice have been having a great time in the house. In every pocket of garment hanging on the wall and in every little fold of any clothing exposed and even in a cap hanging on a nail they have established caches of oatmeal. In the cap there was more than a handful Unpacking the box with specimens cached at Kittigazuit I found that the mice had destroyed some birdskins in spite of the arsenic in the skins. I tried to get some traps but there is not a single trap to be had in town.

Wed. Sept. 14 - Writing and making up my expense account. Caught one large 20 lb. salmon trout. This is the first one I have seen here. Beautiful fish; but I have nothing else for the dogs so they got it. Fine day.

Fri. Sept. 16 - Blowing and snowing . Freezing every night. Finished my expense account.

Sat. Sept. 17 - The Liard got in at 2 p.m. and leaves in the morning. Got through my mail in the evening and wrote most of the night.

Sun. Sept. 18 - Delivered my mail at the post office at 8 a.m. I only got the most urgent from hand and did not have time to type my preliminary report of the trip to Eskimo Lakes that shall have to wait to the winter mail!. The boat left at 10. Saw Mr. McDougal off. Mr. and Mrs. Stringer, the Bishop, are going back on that boat too. I am glad I am not going myself - hope I shall not have cause to be sorry later. After the blow last night I got 8 fish today, but have to cook for the dogs every day. On the last mail I got a nice little mountain transit, sextant with artificial horizon and a 23 jewel Waltham mean time watch. I wish I had had those instruments this spring instead of now. Unpacked and straightened up things.

Mon. Sept. 19 - No luck with the fishing. I only caught one whitefish. Started drawing up my sketch map of the lakes. Got an Indian started on the house. He is corking the outside and after that he is going to bank the walls up with muck.

Tue. Sept. 20 - Caught two fish today. Snow and stormy like yesterday. Bob is not back yet, he is probably delayed by this weather. Wired National Museum enquiring about our Alaska collection.

Wed. Sept. 21 - Like yesterday, but not so much wind. Moved my net a couple of miles down river.

Thur. Sept. 22 - Blowing and snowing. Freezing all day. It has been freezing nights for the last week. Ice on the small lakes. Went down to my net but did not get as much as I had expected - 1 connu, 1 ling and one jackfish, all good size. Today the dogs had one small feed out of four days fishing. Put a second net in below Jackfish Creek. Indian is still corking the walls. I am getting worried about Bob. I hope he is not having trouble with the "Evinrude". Today is the 9th day since he left.

Fri. Sept. 23 - Blowing pretty hard and cold from S.E. otherwise fair and sunshine The first for a long time, but even at noon the temperature did not even get near freezing point. Had a reply yesterday from Dr. Malte. Our specimens have been shipped from Nome, in August, but not been received yet. Had considerable better luck with the fishing today. In the net on this I got 5 jackfish - two of them about 3' long, weighing over 10-12 lbs. and a whitefish. In the other net, there were 2 Connies + Porio whitefish. Quite a catch after the poor luck I have had lately and for the first time. The dogs had a decent feed out of one day's turnover. Most of the whitefish are "crooked backs" and only one was the short round straight kind. Took some photos of the 4 kind of fish. Since the 19th bands of geese have been passing southbound. One night when it was a howling blizzard I could hear the birds as they passed and I have only seen few flocks in daytime. Today a number of swarms of snow buntings passed and probably one band of red polls. I wanted to shoot one or two for identification purposes but they were too high up. There are lots of ravens around but otherwise I have seen no birds. I saw 5 old sqaws passing ~~/~~ south this morning. Went out in the afternoon and tried to collect some seeds. Very little left and there is ~~probably~~ hardly a leaf left on the alder and poplars. Autumn is very early here compared with Greenland or Alaska last year at least. In Greenland at same latitude we seldom have continued frost in September and the best time to collect seeds is right now. Indian finished corking and is going to bank the walls on Monday. I tested the transit today to find the bubbles and hair cross out of adjustment on this instrument too.

Sat. Sept. 24 - When I got up to my net below the Hospital today I made the surprising discovery that somebody had deliberately plugged all of my 12 floats with a 22 rifle. I went ashore and found the tracks - 9 inch moccasin - white man, using Western ammunition that only two men have in this settlement. "One

of the traders carry it. I did a bit of "detective work" and found out who it was but could, of course, not do anything or carry the final proof without starting more than it was worth. The only satisfaction I had was in telling the story in the barracks when the man was present. Took the net home and made new, unsinkable floats. I have been cleaning the mice out and think I have - at least for the present - got them all. Put in four windows that had been broken for some time.

Sun. Sept. 25 - Snowing and blowing, so I could not go to the fish net till in the afternoon. Put in the net again. Went up behind the R.C. Mission and tried to collect some seeds.

Mon. Sept. 26 - I got about 10 - 12 fish a day average and only have to cook one bushel of meal. Lazarus banked up half of the house. Skinned and stuffed some mice for Dr. Anderson and stored away some of the summer's collections - insects and archaeological stuff. Blowing.

Tue. Sept. 27 - Fine day. Had an unpleasant experience this morning. I have, the last week, been attending fishnets together with one of the new wireless boys. He is not very experienced in a canoe and capsized once this summer. I was tying the net to the anchor line when suddenly the canoe went over. I do not know what the reason was, but the other day when I was taking a fish out of a net he suddenly bent over the side to push a stick from getting into the net and had I not made a jerk back or we should have capsized then. We were above the net close to the anchor buoy. I held on to the canoe to see how the current was running and saw we had to go round the net in order not to be caught. I therefore yelled out to the fellow "watch out for the net - follow me" and started out for the shore. I wore heavy hip boots and was pretty busy attending to my own business and did not look back till I got in because I had seen that he could swim. Now when I looked back I saw he had tried to make a shortcut and had gone head first right into the middle of the net and was stuck. Fortunately a couple of canoes had seen us and came to the rescue just in time. I do not know what I should have done if they had not come to his help. The water was beastly cold and I was so tired from swimming with the heavy boots that I doubt that I could have gone out again even after removing the boots. I might have been able to pull the net ashore with him but the chances are that he would have been drowned before I could have dragged the heavy anchor in. I was glad to get a good stiff glass of whisky when I finally got home. Funny enough I did not get my head under at all and when I waded ashore I found myself still smoking my pipe. Somebody has remarked before that my pipe and I are inseparable. In the afternoon while I was out at the nets again a schooner pulled in and when I came home I found Bob back. He had been delayed much by bad weather and engine trouble. One day from here the lower crankshaft bearing broke and he had to charter a schooner that he found there. We succeeded in buying 190 fish from the eskimo who owns the schooner. Amos is his name. Not much - but it helps a little - expensive too - 15¢ a piece we had to pay.

Thur. Sept. 29 - Made up my mind to go to hospital again for a couple of weeks to see if proper rest can get me fixed up faster than "home treatment". Fishing has been fair the last two days and we had for the first time a surplus also with the fish we bought we or rather Bob is able to leave the dogs and go out to try for a better fishing place supposed to be unoccupied about 20 miles below here. Joe the baker will feed and look after the dogs. I wish he could have somebody go with him. He will be back after 3 or 4 days and if he finds a good place he will get more nets and go back. He only takes 4 nets now. I put a new lock on the house.

Wed. Sept. 28 - Bob had already fixed the engine up yesterday evening and we went out to the nets together in the morning. Only caught 9. Saw the Doctor again today. He wants me to go to the hospital for a couple of weeks now Bob is back.

Fri. Sept. 30 - Had been snowing again last night. Went into hospital in the morning at 10 a.m. and started "serving my sentence". Bob left in the canoe down river about an hour later.

OCTOBER, 1927.

Mon. Oct. 3 - Bob back with about 150 fish. He cannot manage alone and is moving to a place nearer the mouth of Aklavik. Same bearing of lower crank shaft broken again, a 1/6 crank case bolt broken, this probably the reason. He paddled all way back.

Wed. Oct. 5 - Bob went back to move camp. By combining parts from new and old engine got the Kicker working again.

Thur. Oct. 6 - Bob back paddling. He had an awful run of bad luck. While attending to the nets his camp burned down on him and everything except his guns destroyed. Also the Evinrude which was in the tent. The most important stuff lost are: tent, eiderdown sleeping bag, reindeer parkie, tank and magneto of Evinrude besides his personal suitcase with several garments in. Too bad.

Sun. Oct. 9 - River freezing up.

Sat. Oct. 22 - Cold, snowing. Left the hospital at noon. I am not entirely alright yet, but progress seems to be so slow that I will try to do a little work at home. The Doctor does not think it will do any harm. I am fed up with the hospital anyway and am getting weak from staying in bed.

…………… ……………

For the last two weeks there has been vast herds of caribou west of the delta, some days as close as 8 miles from Aklavik. Although the season is supposed to be closed the natives and whites have been "allowed" to kill some for meat "because" the fishing has been poor. Some hunters went out and killed as many as 20 - 30 in two days when the Police interfered and regulated the killing to 12 per household - I think. Personally I do not see the use or advisability of the restrictions provided in the game laws as an effective closed season cannot very well be enforced. Usually the caribou are so scarce or are far from any inhabitation that the number killed is very low in ordinary years and the natives will reason that if they do not kill now, they will probably not get any when the season opens November 1st. Season opens September 1st to 30th and October and November is closed. Why I do not see. Rutting is probably over by end of September and the deer in best condition while in December they start getting poor. Bob has been fishing all the fall and has not been hunting at all so we are the only ones that have got no meat. The surplus from the fishing is not very considerable and we have only a little over 100 fish in the cache. Bob is "mudding" the house up outside. A slow but very important job. His nets are in a lake about 8 miles up the Pokiaq Creek and are looked after every other day. He got 45 jackfish yesterday.

Sun. Oct. 23 - Bob went with the dogs to the fish nets on Pokiaq creek. I went out for a short trip on skis just to find out how weak I was. Did some odd jobs around the house and wrote some letters. Bob brought back only 25 fish. Bob made preparations for trip after caribou.

Mon. Oct. 24 - Bob left about 10 a.m. alone. Read Mackintosh Bell's report on Great Bear Lake. Started sorting out the botanical collection from the Sea Gull Lake trip this spring. Fine clear day. Took some pictures trying or testing some screens. Killed Jumbo. He is too old and we cannot feed all these dogs.

Tue. Oct. 25 - Fine day, calm. Put mud on the front side of the house. Bob came back in the evening. He had made a trip to the valley behind Black Mountain and had seen no fresh tracks ang got discouraged. He should have taken a native with him but thought it not necessary. Temperature drops under zero at night but sun is still quite warm at noon.

Wed. Oct. 26 - Fine day. Mudded the house and put a pane of ice over the kitchen window. Skinned some mice for specimens requested by Dr. Anderson. Bob went to the fishnets. The big lake where he has been fishing lately seems to be exhausted. The lake is apparently without an outlet and not very deep, 8 - 10 feet. The whitefish are of the largest we have had and with short head and round nose, the head almost downwards pointed. The lake has yielded about 400 fish of which Bob has caught larger part in about 60 fathom nets. He moved one net to other lake.

Thur. Oct. 27 - Went with Bob in the morning to fishnets. Skinned more mice. Pickled a fish I got from an Indian. None of the natives have seen it before, while white men knows its from Slave Lake. It was caught in a 4 inch gill net set under the ice for whitefish.

Fri. Oct. 28 - Fine day with clear sky. Went with Bob to the nearest lake to help him with a 20 fath. net. This lake abounds in small whitefish, probably a different species. He caught 24 in two nets. I took some pictures and went home on skis. The eskimo Dennis who piloted us down the delta this summer came in. He had lost some of his dogs and we hope to sell him a couple of ours. We have still 17 left and cannot possibly feed them. Also 7 dogs is about all you can use with toboggan and if we can manage to keep two teams of 7 and 8 alive I think we do well. I gave Bob two of mine and we will sell two of his. 19 degrees below last night.

Sat. Oct. 29 - Another fine day. Worked around the house.

Sun. Oct. 30 - Laid out the collections from Richards Island. A very fine collection it is, a good deal larger than I thought. Bob went to the nets and lake and brought a huge load of greenwood home from the island above. Sold the two dogs to Dennis for about twice we paid for them in Alaska.

Mon. Oct. 31 - Went exploring for fish lakes with Bob after he had visited the nearest lake. He put in one net in a lake not far from the island.

NOVEMBER

Nov. 1st to 12th - Nothing has happened of particular interest. One day goes like the next. Bob is looking after his nets daily. He has ~~had in from~~ uses 2 to 6 and it takes him the best part of the day and averages about 25 whitefish a day. He suspected that a lot of small fish passed through his 4 and 4½" nets and to find out put in a herring net 2¼" mesh. That net alone now catches about 30 fish a day but so small that they do not aggregate more than 5 - 6 of the ordinary large lake fish. Occasionally he finds a net frozen into the ice and has to chop off the whole length of the net. The ice is about 1½ ft. now and it is lots of work. I do the housework. Begin with cooking for the dogs. To save fish we cook our cornmeal with a few fish and some tallow or lard. We generally feed about 75 - 90 lbs. or 5 - 6 lbs. per dog. I think there is more nourishment in that than in the same weight of fish, but undoubtedly the dog cannot digest it so thoroughly and a certain part of it is lost - in transit. I figure about ½ lbs. corn or oats, 1/5 - ¼ lbs. grease and ½ lb. fish per dog. Until recently I had no suitable pot and was using gasoline tins and cooked on the primus stove. This was not very satisfactory as the tins were hard to keep clean also the 2 - 3 hours use of the primus would too soon burn out the generators and we can get no extra ones. None of the traders carry the primus stove and claim that there is no sale for them as

everybody wants the much inferior Coleman stove that costs more than twice to operate and is not nearly as dependable. I finally obtained a large boiler and am now cooking on the camp stove. Besides the house work I saw wood and feed the dogs. In the evening I have been developing most of my negatives from the spring and this summer. We have laid out the whole collection of specimens and I have started on the identification and enumeration. The loche fishing at the mouth of Jackfish Creek is getting good and we went over tonight at 5 p.m. I had poor luck and only caught 13 while Bob pulled up 40. Not a bad catch in 6½ hours. There is a bar just outside the Creek and the fishing is done in from ½ to 2 feet of water. We got some 20 lbs. fish but the average, I believe is about 6 - 7 lbs. The Pokiaq's have put up an ice house on the spot and have between them caught between 1 and 2000 this fall.

Sun. Nov. 13 - We went to the fishing place when the day's work was done at 4 p.m. and started fishing. Bob had quite exceptional luck and got 52 while. I got 17. The whole catch was all we could pile on a 12' toboggan with canvas top on, 4-500 lbs. I think. We were back a little before midnight.

Mon. Nov. 14 - Fishing today from 2.30 p.m. to 10 p.m. We got 83 between us. It is very unaccountable how the fish come. I never changed my hole and caught steady while Bob had no luck at first and not until late did he get his pile. At times as much as 12 men were fishing and during the night over 25 holes were used but none but us got any considerable number. People were cutting holes around mine as close as they could but there were nothing. We must have had well over 500 lbs. when we finally finished. Before it got dark we caught 9 jackfish and 2 connies, one of them 16 lbs.

Tue. Nov. 15 - Fishing again from 3 to 9 p.m. and Bob again from 11 p.m. to 5.30 a.m. I got 44 and he got 50; not a bad catch. We have quite a pile now in our fish cache and with some cooking I think we shall manage.

Wed. Nov. 16 - During last week in few odd hours of sparetime I identified our collectionf from the spring trip. Tonight I started on the collections from the summer trip. Bob fished alone - in 3 hours he got 30. The harring net is still averaging between 25 - 30 little whitefish and some pike. Went on a trip downriver to try a set of collar harness.

Thur. Nov. 17 - Bob went up to the island and brought back two loads of green wood from his cutting this spring. He had 13 dogs lined up and his last and largest load weighed over 2300 lbs - quite a load. I went on with the collection. Have discovered several very interesting things already. The temperature was about 20 below for a week but now it is raw, not very cold and snowing a little every day. I am planning a trip to Tuktuyaktoq before the snow gets too deep.

Fri. Nov. 18 - Working on the plants. I am having Enoch fixing up the other two boards into a toboggan. Unfortunately the front is badly broken. It takes two sets to make one good toboggan. The last week I have had a white woman who is living with the R.C. Mission to sew for us. I found her a lot cheaper and more willing to work than the native. She has never made those native style things before, but is not doing bad at that. I believe she is getting practically all the work from the whites - laundry too. We have had canvas snowboots and duffle parkees made so far. We shall try to get on this winter with the fur we brought, from Alaska. Bob had half of his parkee burned when his camp burned on him this fall but had it fixed up. We never got any reindeer skins from the Lomen Co. and I have not even had a reply to my inquiry by cable over one month ago. Wonder if the Company has gone broke.

Sat. Nov. 19 - Working on plants all afternoon and evening. Bob is fishing. The net is still faithful but the fish are not so plentiful now, he only caught about

a dozen. He caught a different kind of jackfish in the lake today. It looks like the common kind but has no~~t~~ spots or bands and is uniformly grayish green on back and sides. I pickled one of each kind for the museum.

Sun. Nov. 20 - Working together on the collection all day. Snowing and blowing from S.E.

Mon. Nov. 21 - I have had a set of toboggan collarharnesses made for my dogs. I do not like the collarharness but I guess you have to use them in this country because you have to work your dogs tandem . If I were going to stay here I would try the Siberian harness. Drove together with Bob out to his fishnet. We took out 40 fish that had been caught since yesterday, unfortunately they are not connies or loche and the whole catch will not feed our 15 dogs once. In the afternoon Bob went fishing at the Creek and got about a dozen loche going out to the fishnet. I saw a flock of Pinicola enucleator, beautiful red birds that looked very pretty on the frost clad willows. I carried a shotgun and killed two. Unfortunately the shot were No. 6 and spoiled the birds as specimen. I saved the head, wings and feet and made a determination of sex. We had the Corporal and Sergeant Gourley from the wireless over to a bridge tonight. The Corporal just cam back from a patrol to Herschel Island yesterday and reports distemper amongst the dogs on the island. He said he had kept his dogs separate from the island dogs but doubt very much if he has avoided bringing the disease back with him. It will be bad to get it here for us also. I think, though, that most of mine had it the spring of 1926 or the fall of 1925 all except one or two, so they should be immune. It seems to be very hard to get a guide to the coast because of the trapping.

Tue. Nov. 22 - Got my toboggan from Enoch. Sawed wood, etc., etc. Cleaned a large beautiful caribou bull head and identified 100 numbers of plants from the north end of Richards Island before I went to bed. There is still some snow bunting around, though not many.

Wed. Nov. 23 to Fri. Nov. 25 - Same. I am through half of the plants now. Over 600 numbers. I think we have about as many as from Alaska. I cannot get a guide it seems. I would prefer to have one of the huskies but the only one available is not allowed to go because his wife is expecting a baby some time in the near future. Rigged the canvas top of my toboggan and burned pine tar on the bottom. I do not know if it will work as good on a toboggan as on skis, but I shall find out. It is fine on skis. The Lapps are always fixing their skis with tar and the better Norwegian skis are tarred too.

Sat. Nov. 26 - Bob has hung another herring net and we went out to set it today. It was blowing and drifting hard from North at about 20 below. After some search we finally found a place deep enough i.e. over 10 foot of water is required for a net 6 foot deep as it has to be well under the ice to prevent it from freezing into the ice. The net is 16 fathoms and it required 6 holes to bring the line under. Bob has acquired a good skill in pushing the ice chisel under without getting the hands into water. The ice is about 18 inches thick now and the whole job took about 3½ hours, coming and going. The other net on the west side of the lake only caught 15 fish since yesterday. The largest number caught in that net was the day before when it caught 43 in one day. The fish average about 1½ lbs. and 40 fish is about one feed. When I go away he should be able to save some fish besides. In a couple of weeks the ice will be too thick to continue fishing on the lakes. We went upto the wireless tonight to see if we could get anything from W.B.Z. broadcasting to the North. Just when I came in I heard my name - Westinghous O.G.D. Godhaven - and some other set in town interfered. I sat there for about an hour and heard several messages, but none were intelligible throughout. There are three more sets in town and especially on these evenings everybody is trying to beat the other to it and nobody got anything. Before I came Mr. Clouff heard Mr.

Finnie sending a bunch of messages, but he could not understand any of them. Moved all my dogs behind the house where there is more shelter and snow. Gave them a bunch of spruce boughs.

Sun. Nov. 27 - Clear and cold with a cold north wind. Went out and brought back a big sledload of spruce boughs.

Mon. Nov. 28 - No guide available yet. Went out with Bob to reset a fish net. The hauling line had broken last time he visited it. Walked over from Enoch Creek to the fish lake. Lots of ptarmigan tracks but saw none. Was looking for some specimens of the Fine Grossbeak that I killed two the other day, but they seem to have moved south since the cold set in.. No snowbunting, either. Beautiful clear day. About 30 below. We were down visiting the R.C. Mission in the evening.

Tue. Nov. 29 - Fixed up my sled and harness for the trip to the coast. Worked on plants, etc. The R.C. People paid us a return visit.

Wed. Nov. 30 - A husky by the name of Lucas came in and offered to go with us as guide. He lives about 7 miles from here. He is going back today and I am going down to his place tomorrow. Gave him 14 days single rations for his wife. Got ready to go tomorrow afternoon. 40 below last night. Wired Mr. Finnie of how things are proceeding and of our plans for the winter. Also asked about the service of Mr. Arden for next season. Blowing from south. Pretty hard to keep the house warm. Barometer 30.6.

DECEMBER

Thur. Dec. 1 - Fine and clear with a south breeze - about 34 below. Packed up and left when Bob came back from the nets. Had no trouble in following Lucas' trail and arrived at his big comfortable cabin about 4 p.m. I am using 7 dogs in tandem.

Fri. Dec. 2 - Up at 8 and started at 9 a.m. Lucas has pretty poor dogs and I went ahead. After leaving the Aklavik the snow got deep and we made but slow time. Dull and grey all day with a little snow in the afternoon and a breeze from north. The dogs got ice in their feet and soon tired. We decided that we could not make next camp today and pitched the tent a little before dark at 3.30 about 22 miles. I would call it a day. Fortunately we had picked up some fish when we passed Lucas' cache this morning. Cleared up at night. Clipped and burned the hair off some of the dog's feet. Used for the first time the tent we had - the "Woods" people in Hull make us after Dr. Anderson's design. It is just big enough for two but very good I think, only there ought to be some kind of protection around the stove pipe as sparks falling on the outer silk very easily takes fire. Although we were watching close this happened twice. It was doubtless below 40 at night but due to the double tent we were warm and comfortable and everything kept nice and dry inside.

Sat. Dec. 3 - Fine and clear day, very cold, - about 45 degrees I guess - for we have no thermometers. I ordered 4 but the department sent in some large stationary min. and max. We followed several narrow and very crooked small rivers with lots of snow and no trail. After two and a half hours we crossed a portage when we had to hang flat behind the sleds with our toboggan brushing the roof of the tunnel and clouds of snow coming down. After the portage we struck a fresh trail - the trapline of Amos and made better time. About 1 p.m. we reached the middle Mackenzie where the snow was hard and the going good. A breeze was blowing from north - it was beastly cold. Stopped at Amos' camp at 3½ p.m. quite close to the hills of the east branch on the Main River we passed a loche creek where there was 7 big piles of fish. Probably 3 - 4000 or 8 - 10 tons of fish. I secured some mink and marten skulls for the museum (Mustelle ♂) Saw several flocks of snowbunting - 2 ravens and a hawk, also some ptarmigan.

Sun. Dec. 4 - Fine day, very cold. Somewhat misty - the breath from the dogs so thick that at times I could hardly see the leader. A very faint breeze from south carried the fog with us so that we travelled in a cloud all day. Lucas' dogs are poor and are getting foot sore. Though he is only carrying about 50 lbs. of my baggage I had to wait several times half an hour. We left at 10.45 and were out on the east branch at 1 p.m. Here good going and my dogs made good time. Reached the timber line at 4 p.m. I wanted to make Pete Stromberg's place - about 25 miles below the timber, but Lucas claimed it would spoil his dogs, so I gave in and we pitched the tent about 2 miles below Tununeq at 6.30. Fine moon.

Mon. Dec. 5 - Fine and cold. Up at six and started at 8.30 an hour before daybreak. Snow is getting soft and the sleds pull hard. 10.30 we passed Nels Holme's cabin. The old man died last year and I think his cabin belongs to the R.C.M.P. We saw numerous fresh fox tracks when we entered the slough where Pete Stromberg is located. We stopped here at 1 and had a cup of tea. Pete is doing badly as usual. He is here all by himself and complained that he had been bad for a couple of days and "seen faces and all kinds of things". Poor old fellow, it must be a H. of a life. He went with us to Kittigazuit to have a chance to talk. We arrived at 5 p.m.

Tue. Dec. 6 - We rested the dogs and are going on to Tuktuyaktoq tomorrow. Got some stuff from the store to take with me for "presents". The collars I got from the N.T. are no good. I bought 3 better ones here to replace the worst of them.

Wed. Dec. 7 - A cold wind from west. We left Kittigazuit at 11.30 and arrived at Tuktuyaktoq at 3 p.m. Distance about 18-20 miles. We found all the men but one gone out to the traps. I had hoped to see at least the "Chief" William in whose house I intended to stay while Lucas went to sleep in Oscar's house. O's wife is his aunt. Lucas' daughter is married here and he wanted to stay here. The reason he gave for his staying was that he had forgotten the trail across the Husky Lakes Portage as he had not been here for 16 years. In his place I hired Oscar's boy, a lad of 14-15. This lad, some time ago trapped a funny looking "wolf". It looked, or rather what remained of the skin looked to me like a kayote. Lucas thinks it is a cross between a wolf and dog. In fact it looks more like dog than anything else. It would have been the size of a rather small dog. Pelt gray like a kayote. Head small and nose long and pointed like a fox, tail large and bushy. I at once asked for the skull but this unfortunately had been thrown away. I offered a prize for it amd may get it. I am going inland tomorrow. Sky overcast in the evening. Glass is going down after having been exceptionally high for a long time yesterday it was 31, this morning 30.4. Have been feasting tonight on "Tippy" fish. The taste is not as bad as the smell of it. I may get to like it before I am out of this country. The people here are still very primitive, by far the the most primitive I have seen in this country as well as in Alaska and they use v little white Man's grub. The houses are large and well built log cabins mostly papered inside and with wooden floors. The old style igileq is still in use while most of the other places they now use outside made "spring beds" even in their summer tents. I got most of the "wolf" head. The jaw is broken and the back of the skull is missing but I think it can easily be determined. It does not look like a dog.

Thur. Dec. 8 - Overcast and blowing fresh from the North west. Snow drifting with low visibility. All the men came in early in the morning from their trap lines because they expected bad weather. Jim from Atkinson Point came in with Williams whom he had met. All well that way. The arrival of my host caused some delay in starting also the weather looked too bad for a while but as it did not get worse we got ready and left a little past 11. The boy is not worth much as a guide though he knows the country well enough. I wanted to take some wood but was told that we would pass a place where we could pick up some. I asked him about it before we got there but he told me we were not there yet. Later I saw the wood alright but as the boy did not say anything I naturally thought there was

a place still closer and passed. When I worried about it later he said that we passed long ago and that he thought I did not want any. About 4 miles from coast I was surprised to see good sized willows and low alder and still more by seeing a rat house in a tiny little tundra pond.   . In a large lake about 10 miles inland I counted about a dozen houses. The natives know there are rats but never hunt them. About 6 miles inland we saw good sized willows and alder. The former 10 - 12'. We stopped at 3 p.m. about 15 - 18 miles in a country fullof hills and lakes, all covered with willows and luxuriant heather. In such places there is good moss too. I dug down on several places and found mostly cetraria but also some cladonia and a few C. alpestr and C. silv. We have here excellent winter grazing grounds much closer to the coast than could be expected and besides such abundance of willows to afford good shelter. Even in the open country the snow is still quite loose and the vegetation is not frozen or covered with sleet at all. Undoubtedly the snow will get harder later but not very much the boy says. There is 2 - 3 foot of snow in the bush and on the willows - one can see that it will get higher later. In the open country especially near the coast there is surprising little snow and lots of grass and ground willows are protruding out of the snow. Noticed Castilleja pal. and Carex holostoma. After some trouble I managed to get coffee made using green willows but it was impossible to get the tent warm. I wanted to take some pictures by moonlight showing the country but as the moon rose a thin mist came up and made it ~~was~~ impossible.

Fri. Dec. 9 - Went over to next large lake that I think is one of the longitudinal chain of lakes that seems to run through length of the "peninsula" having an outlet to McKinley Bay. We saw them at a distance from the pingo reached on our inland trip, this summer from Atkinson Point. This outlet is probably what in the old maps has been mistaken for the outlet from "Eskimo Lakes". In the meantime the boy spent 3 hours unsuccessfully trying to make coffee. We gave up the attempt and started home. Dense fog all day. We lost our own trail twice and had to go back to get in it again. When it got dark I gave up trying to follow the trail and Junior who had not previously been interested in following the trail now had no trouble. He did not follow the trail but seemed to have a very distinct idea of where the village was. I took some compass bearings yesterday and just kept check on him but did not interfere and he brought us right back. I found out that the "kayote" head I got was not from the skin I saw at Oscar's house. That specimen was caught last year and the head belonged to one killed this month (4 Dec.). The skin had just been stretched. Unfortunately the claws were missing and the skin not worth much as a specimen. I offered the owner 16 for it which was refused but after some discussion he probably saw that it was of no value to him except for own use as a trader hardly would pay much for it and I got it.

List of people in Tuktiyaktoq.

William Angalaluk
Lucie - his wife
Felix)
Annie)
Yerrie - widower

Oscar)   Tom
Catherine)

Norman
Wife ?

Samuel (Louse R. Isl.)
Peter Katlik

Sat. Dec. 10 - Fine day, clear and almost calm till late in afternoon when overcast and west - northwest wind. I bought more fish from Oscar at 20¢, enough for two days at 2 fish per dog. We left at 10.45 and headed straight across the bay for the portage across Richards Island - same place as we visited last summer. Fine

going. Stopped at the island about halfway - course about 230 mag. or about due west 2½ hours. There are two conspicuous pingos on the island, the most westerly is broken i.e. crater like. I went up to investigate about 40' high to edge of crater but must have been considerably higher; diameter probably 400 by 600'. Inside is a lake about 8 - 10' above outside ground level.

Sketch of
Broken pingo on Midway Island east of Richards Island
from S.

Stopped at Samuel's house at 2.45 to pick up wood and continued over a narrow portage on to the big bay that from the north end of Island cuts way down south and west. The bay trends west along 3 cutbanks on north side and two on south. Stopped on south side bend a little after 4 p.m. and set up camp. We found lots of wood here so our precaution was uncalled for. Wood is scarce on the north end of island, we noticed last summer, and had been warned to take wood. Glass still going down but slowly, 29.6 tonight. Lucas is much worried over how to find Dennis' place and the portage. He has never been over there before. If weather keeps clear we should have no difficulties I think.

Sun. Dec. 11 - Up at 4.30 a.m. Little wind from west. Start at 8 continued on the inlet about 5 miles, portage over string of lakes, first on large, rest small. Divide close to west side of land not high probably 100' above sea level. Descended to small bay full of old driftwood. At daylight, about 10.30, wind increased and kept on increasing with snowdrift and fog so we could see nothing. Driftwood Bay 11 a.m. We kept on on what natives call a big bay and saw land on south first, later north too Islands? We saw several trails once or twice from last fall but lost them again. Course across island about due west; other side southwest, for 4 hours. Came to island with cutbank and sandspit facing south. Lots of wood. Getting dark and dogs tired of facing wind. Made camp. Nasty and disagreeable day that gives me vivid recollections of last winter's travel between Pt. Hope and Pt. Barrow. Kind of day that makes you wonder why people voluntarily travel. Country makes you wonder why foxes want to live here and why people live in such God-forsaken place. Distance from Samuel's house across Richards Island to Driftwood Bay between 20 - 25 miles. Northeast part of island much cut up by inlets and lagoons while west side where height of land is fairly solid. Good summer grazing but not suitable for winter. Saw an eider duck sitting on a snow bank where we camped.

Mon. Dec. 12 - A howling blizzard all night with heavy drift. Lucas' dog nearly got buried alive and one almost strangled to death when the chain got too short. The outside tent is very heavy with frost but the inner one is still fairly dry. Wind blew with undiminished force all day so no use to travel as we would not be able to find or see the house even if we were close. I went out to get and chop wood but was glad to get into the tent again. Glass unchanged. Cleared up a little about 6 p.m. but wind the same. We only had one herring for each dog and nothing for tomorrow.

Tue. Dec. 13 - Blowing and drifting worse than before. A large snowdrift is reaching the tent and my side is getting buried.

Sketch of portage across Richards Island

Wed. Dec. 14 - Cleared up some during the night and wind went down some. We were up early before six and started to dig out the tent. Had to cut the ropes on one side as sticks covered with over 8' snow. We saw an island about S. 40 West at 8 a.m. and started out crossed a strait about 2 miles and followed the side of island turned to end and returned following north side. Blowing hard again with heavy drift. Came to Ukivik at noon. The two houses are in bay at north side not far from east end. Dennis had been away to his traps since Friday and is probably caught in the storm too. Cleared up in afternoon. Took a walk over the island. Vegetation of the Richards Island type here while the whole S. side is one large luxuriant meadow of several square miles. Grass abundant - 1 -2' high. Noticed here (at Ukivik) Parrya nudicaule not seen before. Only one specim seen. On the north coast facing the open sea saw one large slumping of about 1 acre. The island is evidently at least in places built up on ice. By the slumping the surface had sunk about 15' forming an amphitheatre open towards the sea and with a mural bluff on the three other sides. Exposure of clear ice on east side. Following the shore back found a Winchester 30-30 long in apparently good condition Natives seldom use a gun more than a year or two and throws it away when rusty. A gun like that would be worth several blue foxes in Greenland, while here they wou not even think of keeping it for spare parts or ordering new barrel.

Thur. Dec. 15 - Almost calm, slightly misty and nasty cold. They have very little fish here so I did not like to stay. We got 20 fish and 3½ gallons seal oil (at $2.00 a gal.) and left at 10.45. We dried the tent yesterday and lightened it of about 40 lbs. of ice. Lucas did not know the trail too well and I think we made several detours. Dogs are getting poor and we made poor time. At the border of delta there is a line of island, some low, grass covered and some high, covered with low willows and heather. Abundance of sloughs and channels. A reindeer drive should follow this line of islands starting out from Whitefish Station inside Shingle Point, cross the upper part of Richards Island, keeping well out of the willow belt that starts about 15 miles south of Kendall Island. (Ukivik). The drive should not take place later than March and unless the herd should summer on Richards Island. The fawning should take place on the mainland about 10-15 miles behind Kittigazuit. We kept going two hours after dark looking for wood and camped near the island (Richards Island) well below Tununek at 6 p.m. Distance probably only about 25 miles. We should make Aklavik next Monday.

Fri. Dec. 16 - Up early and started at 8 a.m. River very crooked and L. did not know the portages if any are known. Abreast of Tununeq at 2.30. Saw first spruce at 1 below Tununeq. Saw one red fox and a hawk. Only life seen. Stopped at Garret's place 4 p.m. Light breeze against all day - D. cold. First place I have been at where nobody asked us in. All men gone, this probably is why. Our dogs were not fed either. Garret like our last host, Oliver, owns reindeer at Pt. Hope and is anxious to get them over here. I got what information I could about the case. He informed me that he had followed my advice last summer and written a letter to the Reindeer Superintendent at Pt. Hope. Garret is a big, fat man and he told me he never could get dogs strong enough to haul him and he could not run much so he had plans of getting himself an auto or probably a pair of horses and asked my advice in the matter. He is a hustler besides being a thrifty man and covering a lot of ground trapping. He had about 16 foxes besides a good deal mink and some marten. Characteristic for him is that he is not using butter but cheapest kind of "shortening". I have not been in a native house here or in Alaska where butter was not used exclusively.

Sat. Dec. 17 - Late start as usual when we stop at somebodys. 10.45 - Garret's place is on a small river connecting two large rivers - the most easterly of which is close to the east branch. The small river is called Paolo (? Polarbear mit) or Luis' River. We had fair going on the big river and stopped at Fred Wolki's place opposite Amos' (where we slept going down) at 4 p.m. Garret calls it 40 miles

but I doubt if it is more than 27-28. Fred was visiting Amos, a native, William is living in same house and urged us to stop there (we had intended to go to Amos') Wolki and his wife came back after 12 and we got to bed late. He is halfbreed; son of Captain Wolki and looks and talks perfectly like a full blood white. He must have been outside long and seems to be well educated. He is the man who got 322 white fox last year at Pierce Pt. He came west last summer, married a halfbreed girl from the delta and is trading now. He is a very good man I think and should make good. He is a very good example of the happy ~~conglomeration~~ mixture of the white and eskimo blood and the kind of fellows there ought to be more of.

Sun. Dec. 18 - Left 10.45. Dogs poor. 2 miles from the place we were overtaken by a boy Amos sent after us to tell us that we could save about 3 miles by following his last traplines trail cutting across instead of following the river as we did last. Our first portage saw a marten in one of Amos' traps, caught last night. We killed it and reset the trap. Very good marten. We saw lots of marten tracks, and one of wolverine that had got away with a trap. Lucas later found out it was his trap. Lots of Snow after we got out of Amos' trap lines. Dogs very tired - reached Lucas's trap line tent 6.24.

Mon. Dec. 19 - Started from Lucas' tent camp at 9 a.m. - lots of snow but trail mostly visible and not much drifted in. Dogs poor so we made but slow time. Arrived at Lucas' place on the Aklavik River at 1 p.m. My dogs were tired and I was not sure that I could make the portage in daylight so I accepted Lucas' offer to feed my dogs again and am going in tomorrow. Lucas' mother had some wolverine trimmings. I have not been able to get any and was glad to get some for my outer parkee. Funny the way these people figure things. She wanted $4. for a set of face and hand trimmings which is very cheap compared with what I paid in Alaska where things generally are much cheaper, but for sewing the trimmings on, a job that took her half an hour she charged me $2.00. Snowing a little in the evening.

Tue. Dec. 20 - Blowing hard from north - not very cold - about 15-20 below, but most unpleasant for travelling. Left Lucas' house at daylight and arrived at Aklavik 11.30.

Wed. Dec. 21 - Wind increased at night. Blowing hard with much drift all night. Bob had taken his nets in a few days ago when the ice got too thick. In the east lake he has now caught over 1500 white and jackfish - unfortunately they were all small from that lake only a few were over 1½ - 2 lbs. Opened one of the cans of Gunn's Dog meal and found it to contain tallow. This stuff was shipped us by the H.B. Co. instead of "Husky Dog Feed" which is an altogether different thing containing about equal parts of fats, proteins and carbohydrates with only about 15 p.c. water and inorganic matter. Quite a number of articles sold by the H.B. has been found to differ materially from the articles in the specification - for instance I ordered "Everready dry cells" and instead they sent "Burgess". These I found much inferior for this country as they freeze much more easily. Last year I used "EVERREADY" only and in the morning put my flashlight into my warm sleeping bag where I kept fairly warm all day and in the afternoon at dark always was in working condition. When using it travelling I had the sleeve of my parkee large enough so I could have the stock of the light kept warm by my arm. In this way I always managed to keep it in working condition indefinitely. With the Burgess cells on this trip I found the light absolutely dead already at noon though I always kept the light in my sleeping bag all night to have it warm in the morning when we broke camp. On this trip therefore I could only use the flashlight a few times and then only when first heating it up by putting it next to my body for some time.

Thur. Dec. 22 - We went out together and cut two sled loads of spruce boughs for the dogs. Temperature below 40 to 45 degrees F. Bob cut wood. He has cut up all the

green wood we have here at the house while I was away. This weather takes lots of wood. In the warmest of the rooms we cannot get the temperature above freezing near the floor even if it is about 130 6 ft. above the floor. And for this the H.B. charges us $15.00 a month. I hardly think that anybody but the H.B. Co. would charge anything at all for the house for having the trade with us. I worked on the plants and got through the Dalhousie collection.

Fri. Dec. 23 - Sent out a bunch of wires, one for Boland on Bear Lake in the hope that he is down to meet the mail at Norman so that I can get a reply. Also sent Christmas greetings to Palmer in Fairbanks. Wolki and his wife and Donnald came in - ~~For~~ The former evidently got disgusted with the looks of the place and moved out again up to the English Hospital. He left his dogs however, as he could not feed them up there he explained. We cooked dog feed for 25 dogs and served tea and meals to Husky visitors all day and evening. Temperature still about 48 degrees. Bob broke the edge of an axe today with a straight cut into a green log. The coldest of the year - 52 degrees below.

Sat. Dec. 24 - Fine and cold day. We had the house full of natives all day and served tea and meals for myriads. I started counting them but gave it up. First of course came those people I had visited on my trip to the coast. I wish we could do more for some of them. N.T. or rather Pat Quinn has given up the entire house to the Eskimo and lives himself in a small tool shed behind the store. His bookkeeper is at Red River. A couple of women are presiding in the kitchen and can use of the store ad libidum. Well - Pat does not have to cook his own meals at least. H.B. has decorated the store and guess they do some business too, especially with the Indians. I went up in the afternoon to get a few things - chocolate and fancy biscuits for our visitors. The place was almost empty and they do not accommodate anybody - Not the H.B. Co. Bill Day like Pat has given the house over to the natives. He is alleged to have cooked 2 whole caribou today. Nothing happened all evening. I think the English Mission had Christmas tree for the children, but I did not hear about it till after it was over. At 8 p.m. there was a square dance in a house back of the H.B. We went up there and looked on for 3 - 4 hours. It was something similar to the Greenland old time dances, but the time was much faster and the dancing I think better as far as the men goes. Constable Millen from Red River came in today. He is a good mixer and a very good dancer and stirred things up some. Evidently somebody had been moonshining for Christmas for a few of the Indians were fairly well lit up. However, everybody behaved very nicely and probably would have to even if the entire police force had not partaken in the dance. After the dance finished at midnight a few of the whites dropped into our place and we celebrated with a midnight lunch and a bottle of whisky afterward. Thus passed the third Christmas away from my home and family.

Sun. Dec. 25 - Fine cold day. The town is very quiet today and services are held continuously all day I believe. We ate our Christmas dinner at the wireless station. I did not have much as I have had trouble with my stomach after I came home and had been on a diet for some days. I have never had any difficulties with varied diets before. The tippy fish we lived on on the trip caused no trouble but changing back evidently was too much. In the evening we attended Christmas tree and what they called "The Children's Concert" at the R.C. Mission. The whole town except the English Mission were present and seated according to rank. There was about a dozen pieces given by the children. Songs and physical exercises etc., and two educational or moralizing one act plays. They evidently enjoyed it immensely in spite of a little awkwardness at first due to "stage fever". When the "show" was over one of the wireless people appeared as Santa Claus. He had been present in the audience during the show and I noticed as soon as he re-appeared as Santa Clause the children immediately recognized when looking at his foot gear. When that was over coffee and tea was served in another room

whereafter everybody joined the children. Quite a pleasant evening. The children, about 25 boys and an equal number of girls, from 5 - 16 years were all healthy looking and not nearly as shy as Eskimo children of corresponding age.

Mon. Dec. 26 - The day was divided between serving tea and meals to numerous native visitors and a square dance at the English Mission school. No Eskimo partook in that one on the 24th and even here the Indians were the most enthusiastic dancers, but all the Eskimo in town were at least present and danced several dances.

Wed. Dec. 28 - Bob's birthday. Our guest left. Wolki also so we are through with the cooking for strange dogs too. Some relief anyway. Bob decided to go rson) to the Fort where most people are going to celebrate for New Years. He is leaving tomorrow.

Thur. Dec. 29 - I cleared up the house and started on the botanical collection again.

Sat. Dec. 31 - The town is full of natives again though not quite as many as for Christmaw. I am still at the plants. Went out yesterday to give the dogs some exercise. I have been treating Chaplin and Woolly Actea nut for a few days thinking that their poor condition might be due to worms, but that is apparently not the case. I imagine the business has been pretty brisk in ammunition today judging from the number of shots that were fired at midnight.

JANUARY, 1928.

Jan. 1st. - We have had a mild spell for some days and today the temperature was a few degrees above freezing. There is a dense fog tonight. I went up to the R.C. subscription dinner at 1 p.m. and spent a quite interesting afternoon. The children certainly are not so dull and unintelligent as some people want them to be. I almost believe that Eskimo children under similar conditions would be more backward or a least if they were not backward they would certainly not behave so well. After the dinner one boy of about 12 years gave a speech thanking the contributors. Of course the speech was not his own composition and he may not even have understood all he said himself, but anyway he delivered it as if he had. I printed a lot of my negatives from this summer and did not quit till the early morning.

Sat. Janl 7 - I have finished the collection and made all the cards for the final index. I have all my negatives developed and shall print a few more some day. Bob came back on Thursday having had a nice trip. I fixed up my new toboggan today.

Sun. 8th, - Wrote reports on field work last summer. Plant list and letters.
to
Tue. 17th, - Snowing daily until today. Lots of snow. Have not seen the sun yet. My birthday today. Did not celebrate. Bob has taken the engine out of the "Elsie" cleaned it and put it together. It is now in the house and with the boat given in charge of the police when we leave.

Wed. 18th. to Tue. 31st - We are packing now and getting as much of our mail ready as possible I have over 100 pages typed. The weather has been wonderful. Almost calm and clear every day and temperature has been about 20 above the normal. I wish we could have travelled now instead of later as we are bound to get bad weather after this. Mr. W. Phillips last year at Clarence Lagoon with the H.B., came in and stopped with us. He was let out last year or quit and is

trading on the east branch. The mail may be in any time as it was reported leaving Simpson on the 2nd. Inspector Kemp, R.C.M.P. and Corporal Chitty came in from the Island. Everything fine down there except the fur. The open water is very close often in sight from the island. No ice visible on the other side of the water. Lots of foxes on the Alaska side as compared with last year. The Gordons had all got a years notice and were leaving the place this summer.

Fri. 3rd - The mail came in late in the evening from the Fort. We had a good mail and a fairly large one. I received 3 large registered parcels from London, England. I was surprised as I did not expect anything on this mail but some field thermometers, (that I did not get). I found the parcels to contain a repetition of the photographic shipment received from Canadian Kodak on the last boat. Some wise guy must have ordered the stuff from England too. Funny way to do business. Order standard size Canadian Kodak films, made in Toronto, from London, England. Like the last shipment the plates were 2½ by 4½ instead of 9 by 12 . Besides 12/ postage I had to pay $6.42 customs duty.

Sat. 4th - Reading letters and writing some.

Sun. 5th - Packed some instruments that I cannot take myself as we shall be overloaded and that I intend to ship with some felt pressers to Norman on the mail. I did not want to do this at first, but Mr. Geddes, the former postmaster told me that the mail is never loaded up to half its limit below Simpson. For us and our work it will be of much importance to have these things at Norman this spring.

Mon. 6th to Thur. 9th - Wrote letters and requisitions. Mail closed at 6 p.m. Had a wire from Gus Bergstrom asking what we intended to do with the "Elsie". It was my understanding that Mr. McDougal informed him this fall when the charter was paid that the boat was unsuitable to us. Wired Mr. McDougal but have had no reply yet. I had two letters from Boland at Bear Lake replying to my wire to him via Simpson. He tells me that the H.B. owns a lake boat that is in good shape and would be suitable for us. The H.B. agent who used it died this winter. I at once wired Mr. Romanet, the District Manager, inquiring about the boat and the price he would ask. Several wires were exchanged and I succeeded in bringing the price down from $10 per day to $200 per month or $500 for the season. I did of course close no deals, but reserved the option and had Mr. Romanet wire this agent at Norman so that the final arrangement can be made with him.

Fri. 10th - Mail left. Packed. Last Wednesday we sent an Indian boy with Bob's dogs to Red River with one load of fish and some stuff.

Sun. 12th - The boy came back from Red River.

Mon. 13th - N. storm with a little snow. We are clearing the house now. Most of our surplus stuff we are selling at cost landed to the N.T. as the H.B. did not want to take anything over. All unopened stuff we ship to Norman. This transaction does not only cover our account with N.T. but gives us a balance that I intend to have transferred to Norman.

Sat. Feb. 18 - We have been packing up the last couple of weeks. A large part of our surplus supplies we have packed and shipped to Fort Norman for the summer's use. Had a wire from the Department yesterday saying that Mr. Arden would not come down and that I could arrange for help myself. We left Aklavik at 2.15. It had been snowing hard for two days with a south wind. Yesterday was fine in the morning and we had decided to start but in the afternoon strong north wind came up. The wind blew off a lot of the snow but trail still very heavy in the small rivers. Arrived at John's place at 5.15. John was gone so stopped with the eskimo Sidney. Bob lost 3 of his dogs and was delayed some till he finally caught them again.

Sun. Feb. 19 - Fine day with a little wind from the south - cold. Left at 9.30 - hard going in the creek for about 12 miles when we came to the big river. Stopped about 1½ at noon waiting for Bob. About midways to east branch lost sight of him. I stopped at the Vervilles at the mouth of east branch at 5. Bob did not come in. Went back over the trail at dark to the big river looking for him and fired some shots. Think he must have followed west side of river. He had the dog feed. Cooked some oats.

Mon. Feb. 20 - Up at eight - fine clear day with a breeze from south. Started at 9.30 about 2 feet snow in the river but an old trail after I got out to the big river. Saw Bob's trail here from this morning, going into the east branch. He must have passed while I was behind a low willow island a few minutes before. Walked back till I saw his sled below the houses. Went back to my dogs and waited till 11.15. Left a message at the trail. Some heavy going and had to snow shoe. Ice on the river very rough with lots of loose snow so had to follow the bank. My dogs, very tired when I reached the cabin about 10 miles below Red River. Waited for Bob here. He came 4.10 p.m. We decided to stop here and get up early tomorrow. Before dark I walked about 1½ miles up breaking trail for tomorrow.

Tue. Feb. 21 - Fine day but with the same cold south wind. Started at 9.10. Broke trail ahead of dogs all the way. Pulled in at the R.C.M.P. barracks at 1.15 p.m. Distance about 12-15. We are giving the dogs a rest tomorrow.

Wed. Feb. 22 - Fine day - cold. Went down and saw Mr. McClaude of the N.T. who had 140 lbs. of dry fish that I got promise of from Father Lecuyer when he came down to Aklavik. This will help us out a lot. We have besides that 200 lbs. left that we sent up with the boy a week ago. Afterwards went up to the H.B. Co. Mr. Dodman. I succeeded in getting an eiderdown for Bob who burned his last fall when his camp burned down. He is using a great big reindeer bag from Alaska. Also I got Mr. Dodman talked into going with us one day and take a load of stuff for us. There is not one Indian in town so we cannot get anybody else. We have about 800 lbs. between us. Got the load ready for an early start. Bought some tallow and provisions from the H.B. Figure it will take us ten days to Good Hope. Got Constable Ewers who just got back from Norman a week ago to mark the trail and all the cabins between here and Good Hope. There is practically a cabin for every 10 miles.

Thur. Feb. 23 - Up at 7 and started 9.30. Mr. Dodman came over and took a load of our fish - he is going 1½ days with us. I have about 400 lbs. and am overloaded - 3 bdl. fish, trunk and 4 bags. The 8 mile portage was not too bad though the topheavy toboggan capsized a dozen times. The river was fairly good and we made good time. For first time on this expedition I was not in the lead all day. In afternoon Dodman's dogs got tired and I went ahead at least 8 miles snowshoeing. Stopped 1½ hrs. for tea and continued to the first cabin. They call it 35 miles but it is hardly more than 30. Fine day - could feel the warmth of the sun at noon.

Fri. Feb. 24 - Fine like yesterday. Up at 7.00 left at 9.50. The house is up on the hill and the trail very steep. I could not take my sled right up and left it and the dogs below the last steep hill while Dodman went right up. Going down his dogs were wild and he hit a tree and nearly smashed the front of his sled and hurt his side, though not badly. We made good time and stopped for lunch 8 - 10 miles above at the woodcutter's cabin. Dodman wanted to return from here and could not be persuaded to go on further as he expected natives in for trading any day. When we found that no Indians were in I had expected that the Police who have 16 dogs and nothing to do except cooking for the dogs and themselves might have offered to take some of our load a few days. Dodman told me that

one of the Constables had wanted to but Constable Ewers, in charge, had refused to let him go. I did not want to ask for their assistance as I have always found the R.C.M.P.'s decidedly unwilling to do anything. We were, of course, very nicely treated at the barracks. I think it would have been a very natural thing for them to do us this favour as there is nothing else to keep them busy. After we got the 200 lbs. from Dodman's sled ours was hopelessly overloaded and it was almost impossible to keep them in the trail that was half up the bank sideling towards the river. It involved lots of hard labour for dogs and men as well. It took us 3½ hours to the next cabin about 11 miles above. Just as we pulled out an Indian lad brought in some fish for the woodcutters. He came from Traviak river and brought the glad tidings that the trail was open now and not too bad. He is going back tomorrow and is willing to take 3 bales of fish for us. Some luck today after all.

Sat. Feb. 25 - Start at nine. Much rough ice and sideling trail and lots of soft snow besides. From Adam's cabin the river trends from south east to north east and as the predominant winds are north and south the snow never blows off the river. There is an old trail fairly hard with six inches of soft snow and a fresh toboggan trail on top. Our heavy loads crush the top trail and if not steered the sleds slide a little off and capsize into the two feet of soft snow. Snowshoeing nearly all day behind the sled. Made the first cabin in nearly 3 hours - about 10 miles and stopped here for lunch and to rest the dogs. There is a very high icefoot or rather several as the water has dropped about 12 feet since the first freeze-up. All the sand bars are visible and looks like islands. After the cabin we drove on the ice foot for about 6 miles and then descended on the ice keeping the south side of the river. Reached Traviak river, marked in the map as Thunder River at 5.30 and crossed a stretch of rough ice. Mr. A. Clark has his trading post about ½ mile up the river. A very beautiful location. The hills are several hundred feet high. He is in a small valley in a clump of tall spruce. We got a good feed for our dogs from Mr. Clark of fine good big connies. Our dogs need a rest up tomorrow and so do we.

Sun. Feb. 26 - Rested. I put a pair of handlebars on my toboggan. Dried up harness and got a few supplies from the store. Here in this sheltered valley the sun was quite warm today and snow is melting against the house. Saw a number of Chicadees. Clark tells me they stay here all winter. He also knows that two species,- what he calls the great owl and the mosquito owls winter here regularly. Clarke is an old timer from Yukon and has been here 4 - 5 years. He is married to an Indian woman from Good Hope and has 5 little girls.

Mon. Feb. 27 - Fine and warm. Started at nine and had a trail as far as Clark's trapping tent 9 miles above. A mile below the tent we killed a fine silver fox in Clark's trap. Took a couple of photos of the fox. Started breaking trail from the point - had fair going till Thunder River that we passed at 5 p.m. Struck very heavy going when we recrossed to the right side of the river heading for Haye's cabin about 26 miles from Clark's. Dead Man's Creek (Dean's). Snowshoed ahead about the last 12 - 15 miles in about 1½ feet loose snow. When we came to the creek where Hay's is supposed to be we saw no trails at all and could not find the cabin at first. We finally found an old trail that ultimately led to his house about ½ miles up the creek side. He was just back from his trap line inland. Dogs pretty tired in the evening. The Indian lad Thimothe came with us today but Clark would not let him go more than one day. He is a nice lad, has only 3 dogs and has only been taking about 150 lbs. Saw a snowy owl at Hay's camp killed this winter.

Tue. Feb. 28 - Warm and snowing - about thawing. We got our snowshoes and footgear all wet. Left about 10 and had fair going after we crossed back to the left side of the river. Stopped for lunch at McBride's cabin at 12.30 and left again 2.10. McBride left yesterday and on a note said he would be back today. From his cabin

we had very heavy going till we came to the mudflats that we followed till we stopped at 6 p.m. at Mulendorff's. Only had the snowshoes off while we were having lunch. Hope we don't get more snow. We should get the mail trail some time tomorrow. The Indian lad returned from Hay's this morning.

Wed. Feb. 29 - Warm like yesterday. Started snowing hard in the afternoon and rained a little in the evening. Cleared up some towards night. Heavy going all day but could follow the mail trail most of the time. Stopped at noon at "Chicago" (Tusitsa R.) about 2 miles below Chicago there is an open hole on the east side of river about one mile long, probably kept open by warm springs in bottom of river. The day was warm and heavy fog around the place. Current not very swift. Passed on the river bank inside the water. Could not make Fisher's camp and stopped and pitched tent at 6.30 about five miles below. Dogs tired and harness very wet.

MARCH

Thur. Mar. 1 - Weather like yesterday, only snowing harder. Started a little before ten - very heavy going though we could follow the old trail. All sideling. Made Fisher's cabin in about 3 hours. He had just got in from his trapping camp 60 miles to the west and told us that the mail had camped two days 12 miles above and that the trail was wide open right through. We stopped here to rest the dogs. In the afternoon started blowing from north and drifted heavily. Glass went from 29.6 to 30.2 in a few hours. Fisher did not feel well. He left his wife out in the bush and came in for a load of grub.

Fri. Mar. 2 - Clear and cold with a north wind. Start at 10. Found the trail drifted full with 2 foot drifts in places, crusty but not hard enough to carry the dogs. Still the old trail though very crooked helped a lot. Snowshoed all day mostly ahead of the dogs breaking trail. I did not even take the snowshoes off while having tea at noon. Made the woodcutter's cabin 6.20 and found them both gone and the cabin locked. Too late to make camp. Pulled the nail out that held the padlock chain and opened the door. We needed to dry our clothes badly. Distance about 22 miles.

Sat. Mar. 3 - Very cold with a slight haze. At night a bitterly cold wind sprang up from south. In the bend the mail trail was covered up altogether and could only be felt and we had very heavy going till we came to the island about 6 miles below the first cabin. Soon after we struck a snowshoe trail leading to an Indian camp on the island. Went up and tried to talk ~~to talk~~ to 3 women there. The men were all out. Could not understand if they had gone to the fort but met them later so they weren't. Followed their trapline till the cabin - an old prospecting shack that we could not warm up. Stopped here at 6 after having made about 18 miles in 8 hours. Beastly cold at night. Before leaving in the morning we found an arrow drawn on the woodchopper's cabin pointing to a key stuck into a crevice. The key was camouflaged into a file. We missed the arrow last night in the dark or we should not have had to pull the staple out. Left an explanatory note.

Sat. Mar. 3 - Left about 9 and followed the trap line a few miles behind the island where it ended blind. We found heavy snow here and made very little progress till in the afternoon we found the mail trail again and were able to follow it though we had to snowshoe ahead still. Made the cabin at 5 p.m. and stopped. Distance only about 18 - 19 miles. The cabin was not found habitable so we put up the tent outside. It was blowing all day from the north.

Sun. Mar. 4 - It started snowing in the morning and the trail covered up some more. The light was very bad and we had difficulties in following the trail. Snowshoed ahead all day and did not make much speed. Several times we lost the

trail altogether and had very heavy going. Stopped for tea about 14 miles below Good Hope - continued and finally got in 7.30 after over 10 hours travelling. Distance about 22 miles. Quite cold these last days - probably 30 - 40 below and snow very hard pulling. We were all tired when we finally saw the lights. The trail led us to the H.B. where we were cordially greeted by the Inspector Gowan who invited us to stop with the Company. We had, however, planned on stopping with the Police so Mr. Gowan accompanied us to the Barracks where we were hospitably received by Constable John Cummings/. He told us that the patrol we had hoped to overtake and accompany from Good Hope to Norman had left that morning. He was alone in the Barracks and had lots of room. Bob left one of his dogs on the trail this afternoon. It was played out and its feet were in a bad shape. Cummings did not have much fish but generously gave us a feed tonight. There is no fish to be had at the Fort but had lots of dog meal.

Mon. Mar. 5 - Fine and cold. Rested up.

Tue. Mar. 6 - Another fine day. The dogs' feet are all pretty sore and as we can get feed enough for them here we shall give them a chance to rest up a little. I think we should have a better trail from now on.

Wed. Mar. 7 - Fine and very cold. Must be below 40. Tried to see the R.C. Mission. The Father went to Norman with the Police patrol, the Brother not in.

Thur. Mar. 8 - Am getting Constable Cummings interested in natural history collecting and hope to get him to do a little collecting for the museum. He is quite enthusiastic already - hope it will last. If so, he would have a wonderful opportunity here at Good Hope where he has hardly anything to do in the summer.

Fri. Mar. 9 - Fine day but blowing some so the trail may fill in. Cummings showed me an owl that he had shot a few days ago. Probably the same species that I got from the delta before we left Aklavik. Skinned it to show Cummings how to make a skin. Also wrote ~~him~~ some notes on collecting and what to collect. Gave him also some arsenical soap for poisoning skins. Two native trappers pulled in today and started a lot of excitement. They were both H.B. Hunters and one is their best man. Pulling in they passed the Company store and pulled up in front of the N.T. The latter - Mr. Douglas, was not in so they temporarily put their sleds up at the Police warehouse. They brought a lot of moose meat and probably lots of fur too. The N.T. interpreter unfortunately for the Company was away so they did not want to do any business with them. They would not go to the H.B. for some reason - "because the boss did not treat them right last time". Cummings got a lot of meat and gave them the stuff they wanted in trade. The fur was cached and they went back. Gowan at the Bay of course is furious. N.T. has the last years been gaining in fast on the H.B. and the loss of these two men would be a blow to them - not only for the fur they produce but mostly for the influence they have with the rest.

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We have noted quite a difference in the way business is done here compared with below. After we got out of the Western Arctic District going up river everybody seems to be a lot more accomodating. We had heard so much below about the high prices up here but hitherto we have not noticed it. If you give a native an order here on so many "skins" (0.50) it means that the traders give him trade and charges it up to you at the rate you are getting. That means that an order on $100 would only cost you about $65.75 if the native takes groceries and $40.65 if he buys drygoods. In Aklavik we always were charged with the full amount.

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I went down to the R.C. Mission and found the Brother. I had a hard time talking and understanding French but finally made him understand me. The Father at Aklavik kindly gave me a letter of introduction and he was quite willing to let us have some dry fish. I was trying to make him loan me some Emilee Petitots Books that Father Trocellier told me were here but I guess he did not understand that I just wanted to borrow them and I did not get them. Later the H.B. interpreter came in. He is a bright lad and talks French and English fluently. Treated my dog Silent for worms and with good success.

Sat. Mar. 10 - Fine with a little wind. Saw Mr. Gowan about the fish. He half promised the other day that we could have some fish but it seems now that we cannot. We have been dickering with a native boy about going with us with a load of fish for two days. I am afraid we shall not have any luck. Saw the N.T. about fish and a team of dogs. We have some hope there I think. Bob has finally decided to give up the Nome harness and get a set of harness here from the third trader Mr. Slyman.

Sun. Mar. 12 - Got ready to leave tomorrow. Went up and got two bales of fish that the R.C. Mission had promised us. Got one large bale from N.T. and a small one from H.B. - total 125 lbs. further 36 lbs. tallow. Bought provisions. Cold and clear. Up at 5.30 but the usual delays gave us a late start. After we finally got ½ mile from town Bob had to walk back to get his camera that he had forgotten. Started again 10.50. Stopped for tea and the portage and stopped again to take a couple of pictures at the rapids that are open and quite a sight. Stopped at 6.50 at the R.C.M.P. shelter cabin, 30 miles. Fair trail all day in places somewhat drifted in. During our stay at the fort we cooked dog meal and corn meal. Yesterday we cooked some of the last bale of that rotten Alaska salmon in the feed and I think that is what made the dogs poor today.

Tue. Mar. 13 - Up 5.30 and started 7.50. The cabin is not well caulked and it was impossible to heat it up. I suppose it is because one sleeps on a bunk in a cabin but on the snow floor in a tent, that you generally freeze in a cold cabin but not in a tent. On that trip to the coast in December I was never cold at night and I think the "Woods" eiderdown is plenty warm enough if you sleep on snow with a skin under your bedding.

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The birch or rather 2 or 3 species of them are getting common now. B. papyrifera attaining the thickness of 4 - 6 inches. I think to a large extent the birch is replacing the alder of the lower river. I think the Alnus here is a different species from that on the coast and probably also different from the Delta Alnus. The catkins are conspicuous and fully developed in the fall. I have not noticed that on the others. We had fair going till below the Sans Sault. Here the ice was very rough and the crossing was bad. We could easily follow the old trail though it was blown full of snow. Dogs are a little better and we made the Rosen's trapping cabin at 11.15 about 15 miles. Stopped here two hours to rest the dogs. When we were about ready to start an Indian came in from above. He came from Slyman's cache with a load of stuff. That means that we have a fresh trail to about 65 miles from Norman. We found his trail much cut down by the heavy load. After we passed the rapid that was frozen over we found hard blown snow and made good time. Made the woodcutters (Rosen) at 4.40 and found them both in. I have been much troubled with rheumatism in my knees today. I snowshoed about 10 miles this morning but in the afternoon the pain was so fierce that I could not walk or even bend my knees for a couple of hours. The Rosen Brothers are two young Swedish brothers - very nice and hospitable fellows.

Wed. Mar. 14 - Fine and clear and cold like yesterday. We only figured on making

the R.C.M.P. shelter cabin today so we started late - 9.30. Much sideling. Trail hard. My knees were alright in the morning but after about 10 miles snowshoeing they went bad again. Made the cabin at 2 p.m. It is supposed to be 22 miles but I hardly think it is that much.

Thur. Mar. 15 - Blowing hard from north. Start 9.40. Trail drifted full of snow but made pretty good time to first island about 10 miles. Much rough ice with lots of snow. Did not stop at noon because no suitable places seen. Came to Oscar Granath's cabin at 3.30 and stopped. He left for his traps, this morning and is probably staying out tonight his wife (Indian) told us. He has two little girls - very fair. The oldest about 3 years talks good English for her age. I noticed 4 coyotes skins hanging on his cache. The coyotes are fairly common all along the river and all trappers are much bothered with them and several seem to think they are more destructive than the wolf and bounty probably should be paid for them. On the foxes especially they are alleged to do much harm. One trapper told me they dug out fox dens whenever they found one, killed the young foxes, and stayed in the den. There had been few foxes on the river before we passed, but it appeared that they are running wild now when we passed. Probably the most tracks were seen from one day above Red River to a day below Good Hope then again from Good Hope till a few miles above Carcajou Ridge and from there to here I have not seen a fresh track. Sometimes one fox will follow the trail for 10 - 20 miles digging up the droppings from the dogs. Saw one small white fox traded at the H.B. at Good Hope and saw one track yesterday that looks like white fox. The trappers tell me that a few coming through going west. Most come through when they are abundant on the coast. Saw a snowy owl on the river this morning. My knees were sore all day but not as much as the two last days until a few miles from the cabin.

Fri. Mar. 16 - Clear and cold. North wind still blowing but not quite as hard as yesterday and there was no drift. Pretty hard going on account of siding trail till we reached Slyman's store about 13. Slyman is a Syrian? who came in here with his cousin to trade. Coming down bound for Norman just before freeze up they took the wrong channel and ran the scow aground on a rocky reef behind an island. His trading license is for Good Hope and all his outfit is up here. All was salvaged but of course he cannot haul much down by dogs. His cousin who is working at the scow had gone out this morning. We had made arrangements with Slyman to get some crackling but we had still a few feeds left and can do without. We therefore did not wait for the man but left after we had lunch. From here we had fine going and did not need the snowshoes. Met Mr. Hurst at the Imperial Oilwell. He has just killed a moose this morning between the deserted buildings of the Company. He had followed the animal 10 hours in the bush yesterday and almost given up the chase. He was on foot and going back to his trapping camp a few miles above the scow. We came to his cabin 4.30. About 30 miles today. My personal 21 jewel watch stopped today when splinter of cracked crystal stuck between the hands. Have been trying to get an accurate rate on the two watches. While at Aklavik there was a daily difference of 20 seconds but since the start it increased to 36 seconds though I keep them on my body day and night too.

Sat. Mar. 17 - Fair with a north wind. Start at 9. Made Hurst trapping cabin 20 miles in 5 hours. Tough going in places. Continued through rough ice and sideling trail to Sault's cabin 17 miles below the Fort at 6.30. I had a hunch that the mail would leave tomorrow and as the trail was fine from here I continued. Had fine going till some time after dark when I lost the trail at Bear Rock on the glare ice. I crossed the river when I had the lights abreast. Hit rough ice from B. river. Arrived at the R.C.M.P. barracks at 9.30. Constable Nielsen in charge left for Wrigley this morning. Mail came in yesterday and is leaving Tuesday. Constable Macintyre from Good Hope was leaving in the morning but will wait another day now. Bob's dogs were more tired than mine and he stopped overnight at Sault's.

Sun. Mar. 18 - Constable Brinkwater went with me to the R.P. Postmaster where I got my mail and a half promise for a little dry fish to take us to Bear Lake. My mail had been addressed to Aklavik though I had wired the Department last fall to send my mail to Norman. The Father kindly opened all mail below Norman. There was not a piece of official mail so perhaps that has been sent somewhere else. We cannot get anything but lard and flour and 50 lbs. oatmeal here. I want to move on to the lake as soon as possible. Bob was in about noon.

Mon. Mar. 19 - Started getting an outfit together to take up with us. The two trappers from the north shore are in. Was lucky enough to make arrangement with one of them a Mr. Olmstead to borrow about 350 lbs. of stuff cached at Dease Bay also a canoe. We can easily replace that when we take out outfit over by open water. There is a whole bunch of Indians going up for fish this week. Also Mr. Olmstead. His partner Hart had just quit him and got a job with the police a few days ago. Too bad we are late he would have been a good man for us to take on. It is very hard to get anything in this place. Either the traders have not got it or they are holding it back for their spring trade. Macintyre left. Wrote some wires and letters for downriver.

Tue. Mar. 20 - Mail left at 1 p.m. Mr. Boland came last night. He is going back tomorrow. Had a long talk with him. Trying to get ready to go with him. Got about 700 lbs. of stuff together. Everybody has a cold here and I am afraid I am getting one too. Have not had one since February last year during the blizzard at Cape Beaufort. Blowing and snowing some all day.

Wed. Mar. 21 - Snowing and blowing hard. Up at 6 and went down to see if Boland was getting ready. Found everybody peacefully asleep so I figured that they found the storm too bad and went back to bed. Have a cold today. Got a few other things. Boland and Olmstead and 3 other teams are going up together so we shall be quite a caravan. Got two of the teams - a H.B. and a N.T. man to take 100 lbs. of flour and sugar respectively. Loaded up the sleds in the afternoon. I am taking about 200 lbs. besides what I have already. Very bulky stuff most of it and I shall be very topheavy. Succeeded getting one small bale of fish from the R.C. Mission.

Thur. Mar. 22 - Snowing and blowing a little. We were up early but did not get off till about 9. 4 of the teams went about one hour earlier. There is a cut trail one spell (about five miles) very rough but of course hard. After that for 1½ spell the trail went over marshy lakes and swamps with a high trail and soft snow on the sides. We had a terrible time getting the loads over. The other four teams had cut the sides up pretty bad and trying to avoid a hole in one side the sled generally went in in the other side. Soft snow 2 - 3 feet. To make it a little worse my knees went bad soon. There was a tent 12 miles out where we caught up with Olmstead. I almost felt like caching some of my load. My cold is very bad too. Kind of "kill" or "cure" treatment this is. Fortunately the trail was much better in the afternoon mostly going through the timber where there was a good deep trail. I surely admire the dogs. The weight of the load does not stop them in spite of their sore feet. I cannot walk much on account of my knees and the dogs have to pull me too. Found the others camped below the height of land in a patch of burned off timber with lots of dry wood. Olmsted stopped before about 17 miles out where he had a tent. Bob came in about dark. Distance about 25 miles. Saw a snow bunting yesterday at the Fort . It was of exceptional light colour. Tried to shoot it but missed.

Fri. Mar. 23 - Like yesterday. Started 8. Passed height of land and had fair going all day. Saw a black wolf cached in a tree. Boland tells me they are not common here. After climbing the plateau from the valley of the Martin River the trail leads over a number of small lakes and muskegs with lots of birch and some aspen (the first true P. tremuloides we have seen so far. There is positively

none in the delta) otherwise not so densely timbered. (Bl. and Wh. spruce). There are 3 or 4 arborescent birches some up to 6 - 8 inch. in diam. On very few places on the portage except in the river valleys, the spruce is heavy enough for regular cabins.

Sat. Mar. 24 - Early start and fair going. Stopped a couple of times to take some photos of the formation. Dug down in the snow in an open muskeg and found a dense growth of Ledum with Some Cetraria nivalis and islandica.

In one place the trail runs close to the bank of Bear River in the upper bend. The river is here wide open. Down on the lake at 3 p.m. and arrived at the houses at the old Fort Franklin an hour later. Mr. Boland has 2 or 3 houses here. Two Indian tents were back of the store. We had a big feed of herrings for our dogs. The first time since last summer that they had all the fish they could eat.

Sun. Mar. 25 - My cold is very bad. Rested all day and fed the dogs, etc.

Mon. Mar. 26 - do. do.

Tue. Mar. 27 - Went up on a trap line leading inland. Followed trail about 3 miles flat level country about 100 ft. spruce and tamarack. Got some sticks that I wanted for the cyclometer that I am getting rigged up. Hired the trapper from the N. shore Mr. Olmsted to work for us this spring, on contract to work for me at least till end of June. He is getting my dogs in payment, - 6 dogs (except Junior) besides his grub. He is trying to sell his own team. Think he will be a very good man for us. He wants to go into the country north of Dease Bay himself so this arrangement is very satisfactory to both parties.

Wed. Mar. 28 - Clear but blowing all day from west. Unpacked the transit and had it set up to test after the trip. Found that one of the tripod screws in the transit does not fit into the socket. I had not noticed this before. This makes the transit very shaky and possibly counts for the difficulties I have had to get it in level. The whole thing is very worn and in bad shape from wear or ill use. Finished the odometer. Found that the stock of my shotgun had broken near the lock during the transport. Olmsted sold his dogs to the Indian here. Started snowing at night. Mr. B.'s radio has not been working well lately tonight got two time signals, not very accurate though. Am anxious to check up the time on my watches.

Thur. Mar. 29 - Bob planed down the runner of an Eskimo sled we intend to borrow from Mr. Boland for the trip to Dease Bay. Snowing all day. Went out hunting ptarmigan and got 14.

Fri. Mar. 30 - Snowing and blowing. We cannot go till this snow blows off the ice There is lots of fish here and I do not mind the delay so much because the dogs will be better for the rest. Hope my knees will have a chance to get well too.

Sat. Mar. 31 - Started blowing from west.

Sun. Apr. 1 - Same. started to get things ready for the start.

Mon. Apr. 2 - Blizzard with heavy drift. We tried to hire an Indian boy to take a load of green fish to Big Pt. but they did not like to go so far because "they Were scared to go back alone". Mr. Boland offered to go himself. Olmsted, Bob an I went out back of the lake and brought back two big loads of wood.

Tue. Apr. 3 - Fine and clear with a fresh breeze from north west. We did not get started till noon. We take about 1800 lbs. mostly dog feed. Boland returns from Big Pt. and Bob goes through to Dease Bay, and returns from there. We have 19 dogs and 3 sleds. Bob used the Eskimo sled. We found the snow fairly well blown

off except in places where the land sheltered the lake. Stopped 14.9 miles up the coast and had tea. Continued till 7.00 and camped. 20.5 miles. We are all overloaded especially Bob and consequently all had to walk.

Wed. Apr. 4 - Soft going along the coast till Fox Pt. 24.4. Set course for next pt. 355. Stopped for tea at 12 on the ice in the middle of the bay. Left again 2.40. Fine going out here. Camped on other side 6.30. Meter 46.6. Distance 26.1 miles. Fine day, quite cold.

Thur, Apr. 5 - Fine and cold. Start 7.30. Hard going when we came to the Bay. Boland drove the sled and Bob took his toboggan. Stopped west of Bay for tea again on the ice. Last time put up our double silk tent for shelter. Bolands small stove was set up and got too hot. The tent caught fire and though Bob and Boland were inside the fire had spread so much before they saw it that the tent went up in flames. I was outside and pulled the tent down to lee and put out the fire by stamping. The tent however was gone or at least ruined as about 2 square yards were burned up. Walked all day. Was ahead 15 miles. Olmsted is invalid today and had to ride all day. His feet are blistered badly and though he protested we made him rest his feet. Camped across the bay. Meter 74.6. Distance 28 miles.

N.E. corner of Grizzly   90 W. corner
129

Pt. W. of Deerpass   195

Pt. of scented   in Deerpass 229
Pt. - - - -   (N.E.) 20.

Sights from Pt. of S.W. end of
Scented Hill Pa.   where Pearson's   monument is.
Distance 80.3

Fri. Apr. 6 - Good Friday - Fair and warm or mild in the morning. In afternoon a strong wind started from S.W. Start late. 10.30. Did not stop for lunch. Camped at last wood about 4 p.m. Meter 90.2. Distance 15.6. Soft snow all day. Fed last fresh fish. Near the point there is a border of barrens along the beach and to get to the timber we had to go up over a ridge running parallel to the coast. This ridge is probably about 50 feet and runs all the way down to Deerpass Bay. Numerous small creeks cut through it. Right at the S.W. corner there is an exposure of what Boland said was shale - a few hundred yards from a beacon or monument from the survey a few years ago. Stopped and took some sights here. The hills or ridges mentioned above otherwise looks like glacial origin with numerous gravel boulders. The place we camped is noticeable from a distance by a peculiar looking stunted spruce (photographed). The trunk is about 8 - 10 inches at the butt, quite straight till about 12 feet above the ground where the top starts. This is almost globular and the branches are twisted in a peculiar way and looks almost like one of these Japanese dwarf trees. All the spruce close to the lake are stunted in growth with a short but thick trunk and likewise short and dense top, often bent by the wind.

Sat. Apr ~~Mar~~. 7 - Fine and warm in the morning. Boland returned. Started at 8.30 going about N 5. Hard snow about 6 miles from the pt. but overloaded and did not make much speed. After we cleared the pt. a north wind came up and it blew pretty hard with drift all day. Low visibility and we did not see Caribou Pt. till about 5 p.m. Kept on till nearly dark and camped on the ice. 28 miles. Meter 118. We did not bring any wood as we had hoped to get across.

Sun. Apr. ~~Mar~~. 8 - Easter - Started at 9.45. Made the pt at 10. 5 miles from our camp. Saw old caribou tracks but no caribou. Kept on going till the first timber

and camped. Distance 12 miles only - meter 129. We needed to dry out our clothes, etc. I broke my snowshoe, lacing and the front crosspiece yesterday and had to fix it up. Cold. Wind like yesterday but calm at night.

Mon. Apr. 9 - Wind turned in the morning and when Bob started the fire the smoke went the wrong way and he had to turn the tent. Started at 9. Low visibility and fog and snowdrift. As soon as we turned the point we got headwind. From the point and all the north shore of the peninsula is low flat land with numerous deep inlets or bays. We kept going parallel to the edge of the timber that starts 2 - 3 miles inland where the land gets higher. Stopped at 1 p.m. and had tea. Start again at 2.30 and camped at 6.30 on the mainland behind Karqa Island a well defined landmark. The island is rocky and sparingly wooded, probably 5 - 600 feet high. No caribou tracks. Saw two ptarmigan that I shot. I only had a 30-30 and one was rather badly "blown up". Meter 153.7 Distance 24.7 miles. End of Long Island 168.6. Pt. on main c. entrance to Narrows 171.2. First island in narrow 177.2.

Tue. Apr. 10 - Start 8 a.m. calm in the morning, later a breeze from S.W. Saw many caribou tracks soon after start and about 9 miles down fresh tracks of one small band, probably from this morning. Bob continued to first wood, made tea while Olmsted and I went out to some small islands where we had seen many fresh tracks thorugh the field glasses. We were a few hours late. With the field glasses I could see a band of 12 crossing to the north shore, probably about 6 miles out. They were just walking slowly and I do not think they had the wind of us. We could not possibly overtake them before they were over, so we went back to the sleds hoping they would stay on the north shore till we got time to go after them. Started again at 2.30. End of Long Island 168. Entrance to narrows 171. Island in narrows before bay 177, end of "Long Island" 178. Houses 182.7. Distance today 29 miles. Crossing the last bay saw a wolverine crossing the bay from the direction of Olmsted's cache. Not a very good sign. We pulled in at "Lambson's house, a good sized building where Boland used to live. Everything was in fine shape. Very cold. When I had unpacked I hung up the thermometer and found it to register 25 below, quite chilly for this time of the year.

Wed. Apr. 11 - Fine and cold like yesterday. Slept long. Left at 11.30 with Olmsted and my team going to the cache while Bob stayed home to straighten the place up and get a load of wood in. The cache was on the north shore about 10 miles from the houses. The wolverine had been there sure enough and had cleaned up on two fish caches, one on a stake and one in a tree. The main cache however was intact. Took a load of about 800 lbs. and returned after setting some traps for the wolverine. Back at 8 p.m. Cooked dog feed.

Thur. Apr. 12 - Fine and clear. Cold. 33 degrees below last night. Milder this evening. 5 degrees below. Went out to get a load of brush for beds for the dogs. Out again for wood. Very scarce and had to go across the bay to get a toboggan load. Lots of fresh ptarmigan track but saw none. The snow has not started to melt even on the Gyrophora clad cliffs and rocks yet.

Fri. Apr. 13 - Snowed a little and started to blow from northwest. Wrote letters and memorandum for Bob. Made preparations to go to the north shore for caribou tomorrow. Bob stays here and leaves for the west end of the lake the day after. 13 below.

Sat. Apr. 14 - Snowing a little and blowing from northeast - cold. Started at 11.00 and stopped at the cache to pick up a tent and some cornmeal for dog feed. Left the [illegible] here and continued to Fat Island about 20 miles. Camped on west side. Meter [illegible]. Low visibility - north east wind.

Sun. Apr. 15 - Start 8.45 across the bay. Tea at pt. 18 miles. Across next bay and low pt. with barrens. Saw two days old tracks this morning - saw two wolf tracks, one a monster, that has been chasing a caribou bull before last blow, 2 miles west saw the tracks of the wolves returning to the north shore this morning after the kill probably. Camp at Pt. 230.4 28 miles. When cutting the branch off a tree my axe jumped on a knot and hit my left hand. Fortunately I was wearing fur mitts and the axe only cut the mitt and duffle lining and made a cut about 1½ inches long on the side of my index finger. The joint wasn't touched fortunately.

Mon. Apr. 16 - Fine and clear. Left camp after studying the vicinity through the field glasses for an hour or so. Nothing revealed. Followed the barrens to the west for 13 miles without seeing any fresh tracks of caribou. Saw fresh wolverine tracks and later the tracks of the same two wolves we saw yesterday. We crossed next point and went as far on the shore east of the mountains that come clear out to the lake about 8 - 10 miles further on. In the glasses we could overlook the barrens at the far side of the bay but could see no sign of caribou. We have only one more feed for the dogs and the fact that the two wolves are here decided the case for us. In fact I don't think there are any more caribou than the band we saw on the south side. We found the place where they landed yesterday at the mouth of a good sized creek east of our camp. From there they travelled east and one of them evidently was killed by the wolves while the rest were chased God knows where. While we were looking for caribou with the glasses the wolverines had come back and crossed our trail about two miles from where we were. Returned from (243) and camped at same place as yesterday. Took a series of bearings. Camped 255.4 - 25 miles.

Tue. Apr. 17 - Started at 8.45. Weather fine with a very light wind from southwest at first point 10 miles east the dogs caught the scent of something and turned off to the south, towards a small island about 1 mile off the point. We stopped close to the east end of the island and I went up to see if there was anything. Found fresh caribou tracks and saw one at the west end. Conditions were ideal and I got as close as 250 yards and then saw two more - two does and a yearling fawn. The ammunition we had was old Dominion and I found it did not carry up like the Dominion I am used to. First shot dropped about 20 yards short, next the doe went down. I shot once more and then a cartridge jammed in the magazine. Olnsted had loaded up my rifle and by mistake put in a 250 with the 30-30. I could not get the cartridge out and could not even work the gun a single shot. By that time 6 more caribou came out from behind a small hill and passed quite close while I was working to fix the gun up. The bunch herded against the wind and stopped about ½ mile out on the ice. Olnsted in the meantime came up with the dogs that were pretty wild and hard to hold. He went after the band and had several shots but found the same thing happen as I had and did not get any at all. The caribou finally started out for the lower shore. Loaded up the caribou to take it to camp before skinning. Went on to Fat Island and camped at 8 p.m. I wanted to save the skin for a museum specimen - we just managed to get it skinned before the last light was gone.

L: 5 ft. 7 Height over shoulder
3 ft. 8 over cross 3 ft. 9.

Meter 285.6 Distance - 30 miles.

Wed. Apr. 18 - Fine day. Slept long, started at noon. Broke trail through the timber clad valley or draw through the island between its two hills. Packed three sticks to the summit that is probably 500 ft. above lake, and made a tripod signal about 14 ft. high. Took a set of bearings and some photos. Formation old lime - stone with quartz crystals. This is probably "Limestone Pt." of Richardson. There is however a good channel behind the island that is 2 - 3 m. long and consists of two rocky hills with a valley between and south end running out to a low point. There is a fiord 5-6 miles deep due back of island. Going home we stopped at the cache and put on 300 lbs. of stuff. In at 9 p.m. Meter 305.9. Distance 20.3.

Thur. Apr. 19 - Another fine day though blowing fresh from east. Though the sun started melting the snow around the houses the thermometer still drops to 15 - 20 below at night and all day today never went above 10 below. Went out looking for the Big Stick Island trail. Snow is 2 ft. deep in the timber and very bad going as we have no real big snow shoes. Traversed the country back of the bay several times without seeing anything of a trail. Boland said it was well marked and 8 ft. wide. There is a moose in the creek back of Ardens. Track is not more than 8 - 10 days old, maybe less. Olmsted cleaned the caribou skin. We went out and took a large load of wood in with the dogs. Made the unpleasant discovery that I lost this diary yesterday, probably when I came down from the hill on Fat Island. Have to go up after it.

Fri. Apr. 20 - Fine with light northeast - 15 below last night. Left at 8 taking sights and distance for a sketch map. Stopped at north end of narrows to try jiggling for trout. Found ice only 1 foot thick. Fished for ½ hour - no result left the hook 6 ft. under. Cut across Bay and found book on Fat Island 1 p.m. Made tea and returned. Passing the hook I stopped and intended to try another place. Found a trout on but unfortunately lost it pulling it up through the hole. Back at 6.10. Meter 342.1. Distance 56.2. Shot one ptarmigan in narrows today. Worked up my sights at night. Olmsted has patched the burned silk tent and finished cleaning of caribou skin.

Sat. Apr. 21 - Fine and fairly warm. 12 below last night. Adjusted the sextant and took obs. for lat. at noon. Observation not good partly due to the wind and cold that makes the screws tight and stiff. Olmsted went out looking for the trail further to the left than where I was. Washed some laundry. Set up the transit to get a lat. tonight. The whiskyjacks are mating now and could therefore not nest already in March as stated by Chapman's Birds of E.N. Am. Tried to get a pair, but only got the female. Skinned it in the evening. Cleaned the caribou head. Took observations for latitudes & Bootis at night. Got a fair latitude I think. Olmsted came back after 7 hours. Had found the trail about ½ mile left of the creek where I had been. Trail leads over some fairly open muskegs and is well marked by blazed trees he says. Not much cutting. He saw plenty dry wood not far up.

Sun. Apr. 22 - 2 below last night. Fine and warm in morning though wind from southeast. Tried to get meridian by observation for equal altitudes of $\odot$ in fore and afternoon. At noon it became overcast and started snowing heavily in afternoon. I went up on the trail Olmsted broke yesterday and brought back a big load of wood. Trail still very soft. Olmsted started putting runners under the toboggan. Wrote all afternoon.

Mon. Apr. 23 - Fine and clear. First day with thaw. Air temperature 34 degrees most of the day. Southeast wind. Olmsted finished the runner. Put metal stovepipe ring in the tent and fixed up a stovepipe. Took observation for meridian with the transit and one for latitude with the sextant. The transit is still very unsatisfactory. Most of the lenses are badly corroded and all the bearings are loose and worn, though it can be used. Unfortunately the prismatic eyepiece cannot be used. I do not quite see why as it must be for the instrument, but it cannot be focused on anything over 12 ft. and no focus can be made on the cross hairs. Consequently the instrument is useless for high altitude and obs. of polaris f. inst. are out of question. The sextant is a good instrument and in fine shape. Tried the two rifles out on 170 and 340 yards so that we know how to set the sights with this ammunition. Olmsted made bannock and cooked beans. We intend to leave for the Coppermine tomorrow night if it gets a little colder. Took two (not very good) observations for time at night. Stars visible for about 4 hours but it does not get dark any more, tho I had to have artificial light to see the hair cross in the transit.

Tue. Apr. 24 - Chinook from southeast. Wind here where pretty well sheltered not very strong, probably not over 10 m. sec. Thermometer 46 maximum - minimum 36.

Snow. sinking rapidly, in the evening it had probably sunk over one foot and the ice was slightly wet under the snow. We fixed up the speedometer. The two bars I put on at Fort Franklin keeps on working loose at the connection on sled. We Split up a piece of 3/4 inch gas pipe that we found in the L. and H. Warehouse and made a pretty good connection.

Wed. Apr. 25 - Fine and clear with a light breeze from west. Max. 3~~0~~8 - Min. 32. Thawing tremendously. Went up to the diabase rock north of the place and took a number of bearings for my map of the bay. In places where the exposure is favourable there is bare spots where 3 days ago there was a foot of hard snow. In the open flats the willows are nearly uncovered. I found 4 inches of water under the snow in the Mission creek. Noticed Dryopteris fragrans and Juniper~~o~~us communis + Potentilla nivea on the south side of the rock. What shows of the flora is very uninteresting so far. Shot another "whiskeyjack" and made a skin of it. I saw the first snowbird yesterday and a few today. The jays are mating and so are the ptarmigan. Tonight we can hear the mating calls from all directions. Noticed the mating call is very different from that of the Greenland ptarmigan. Shot one male for a specimen back of the house. Snow freezing up some tonight but hardly enough to travel. 30 above at midnight. Went down in early morning.

Thur. Apr. 26 - Blowing from northeast; mild like yesterday, max. 44, min. 34, but snow hardening up after sundown. Made two bird skins. We made preparations to leave for the trip to the Coppermine. We equipped for about 5 weeks except dog feed of which we only intend to take for about 2 weeks. At midnight snow was still too soft to travel.

Fri. Apr. 27 - At 3 a.m. snow fairly hard though not actually freezing. Started at 4 but only got well across the bay. The snow would not even carry in the trail and the dogs broke through constantly. To break trail with the snowshoes would not help any as the snowshoe would only break through in places, viz., the sun side of the E.W. running trail. We were rather heavily loaded but even with a light load a few miles of this going would take all hair and skin off the dog's legs. Turned back. Slept till noon. Still warmer today. Went up over the trail with empty sleds. Snow very soft now and when walking ahead on snowshoes the dogs could easily follow me. In the bush the snow is still deep while in the openings fire swept semi barrens the snow is partly gone leaving 2 - 6 inches of water or slush where the ground is level. Went up 5½ miles and returning took a load of wood back. The broken trail was by that time hard enough to carry the dogs.

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I have never seen anything like this. About 2 weeks ago we had 25 below and less than a week ago we had 15 below. On 23rd we had the first day with temperature above freezing at noon and today spring is fully established. We have had wind from every direction and they are all warm. Saw the first moth up in the bush today and lots of flies. I could smell the spring and noticed the change in colour of the spruce.

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Olmsted made floats and sinkers for fish nets.

Sat. Apr. 28 - During last night it gradually turned colder. Wind blowing from east or north east - colder during night - 31. Raw and rather cold wind all day, though thawing in the sun. Max. 27 during day. Some of the dogs got loose last night and chewed up one of my wet snowboots of mooseskin. Made a new one and a number of dog kamiks. Trail hard. 4 inches water on lake, snow nearly gone here. We intend to try another start tomorrow.

Sun. Apr. 29 - Cold, blowing from N.N.E. 12 degrees F. Up at 6 and started at 10 a.m. Dog feed for one week and grub for about 8 - 10 days. Followed trail through the timber and tried to follow the coast route after a sketch map Boland made me. The travelling is fine on the barrens and we made good time. Last thaw made the snow so hard that you can travel anywhere. Only the hill tops and ridges are snowless and many rocks are bare. Snow is hard on the sleigh but not too bad on the dogs. Travelled N 30 E mag. general. Saw caribou track from last day of thaw near Bush Island, about 5 miles from first barrens. Later near Big Stick Island saw one fresh track. The country traversed today is a plain or plateau broken up in blocks of rhomboid shape. Strike approximately N.S. And N.E. - S.W. Especially the low valley and hillsides are well covered with vegetation affording splendid summer, spring and fall grazing for reindeer. Cetraria nevatis and island and other species. Considerable low scrub. Salix, Cassiope, Potentilla fruticans, Arctostaphylos rubra, Vaccinium Vitis-Idaea and Myrtillus; Carex and Eriophorae. in abundance in the valleys. Camped at 7.30 at what we figured must be Big Stick Island.

Mon. Apr. 30 - Like yesterday. Snowing a little towards evening. Broke camp and left at 10 a.m. Followed right side of S.E. river and turned back to N. 15 E. (from N. 30 E). After we got up fine going. Ascended about 600 ft. About 5 p.m. crossed the divide and soon entered canyon with creek flowing toward the Coppermine via Dismal lakes. Country getting more broken and rough and some tops to east are probably 2 - 3000 ft. Soon after saw first stunted spruce where canyon enters from S. by E. Camped at first good sized spruce where creek runs towards Lake Rouviere, probably "Ukivik" (old camping place evidently). Some spruce are very stunted in growth, one measured 2 ft. 6 at the butt and was probably only 18-20' high, the trunk is almost pyramid~~ic~~al; the lower branch measured 5 - 6 inches and 8 - 10 feet long. Saw several ground squirrels tracks and one animal on the first canyon from Big Stick - shot at it but missed it. No caribou trails. Saw few ptarmigan. I think different from the willow pt. and probably not rock pt. either. Slightly smaller. Black spot in face between eye and bill. B. shorter and foot considerably smaller. Took measurment and preserved the head of five killed.

Tue. May 1 - We woke up to find the weather soft and snowing quite heavily.It would be no use travelling on under such conditions so we remained there hoping it would clear up towards night. It did in the afternoon but did not turn cold till later. We are camped right in a narrow valley or canyon with rather high land to the right where from another canyon joins this. I went up on a mountain or hill about 1,000 ft. to the west of the junctions of the two canyons but could not see very much. Our canyon strikes about N. 20 W. mag. and the other one about N. 80 W. on the latter. There is a ket le lake just above the junction. The main canyon drains a considerable area of high fairly level country to the south from where it receives its main tributary about where the first stunted spruce occurs. The N.W. tributary drains a comparatively smaller area of much broken and rough country towards Lac Rouviere. From my hill top I could see what I think is that lake while the Dismal lakes were hidden behind high hills. The formation is, I think diabase here. The contours are much influenced by glacial actions. Morainic deposits in form of gravels are seen in many places and the hillside are strewn with erratics of all descriptions. The ground squirrels are busy on the hillsides and edge of cutbanks. Saw one Arctic hare and chased it 5 miles towards Lac Rouviere before I killed it. I had only expected to see ptarmigan and only brought a 410 shotgun. Olmsted made a skin of it but unfortunately by mistake fed the skull to the dogs. While I was gone he went up a short ways to the east and saw 5 fresh wolf tracks. They had circled our camp about 3 - 400 yards about noon today. No sign of caribou seen anywhere. It was freezing hard at night. Left at 10.30 and followed the creek about 6 miles down, the geological formation evidently changes. The valley widens up some and the spruce gradually disappears altogether. About 15 miles down the creek flows through a low flat the approach to the Dismal lakes being

nearly blocked by a conical mountain. Mag. north from the mouth of the creek. The course of the creek is very crooked through this flat and much shorter route is to the right over a gently sloping hillside. Through the passage on both sides the conical mountain we looked down on what we think must be Dismal Lakes. Looking down on the treeless shore on a cold morning like this I do not personally think Simpson was wrong when he gave them this name. Camped up against the conical hill where we found enough stunted spruce to make a camp - 6 a.m. - on.

Wed. May 2 - Wind blowing from S.E. all day but not very cold though not thawing even in the sun at noon. Woke up in the afternoon and after eating a meal of hare, the first I have had for a long time, we climbed the conical hill or mountain that we camped at the foot of. The rounded top or summit was found to be 620 ft. above our camp or about 800 ft. above the Dismal Lakes. From the hill we looked down on the Copper mountains on the opposite side so I figure this hill to be about 1500 feet above sea level. Following bearings where: junction of Kendall R. with Coppermine N. 74 E. Boland's rt. (Cr. or end of canyon above delta) (N. 170 E.) to Big Stick Island. First bend in Dismal Lake 270. We could see the whole of Kendall River as well as its valley and junction with the Coppermine. Of the latter we could see what I take to be September Mts. and the east side of the Coppermine valley or canyon. Apparently there is good travelling across the Copper mts. almost anywhere. Aside from the Kendall River valley there is no timber seen across the lake except in the cirque near the east shore of the first lake (see also O'Neil p. ...). To the south Kendall river receives on tributary from a creek draining a rather level and unbroken plain that extends far to the s. and w.; probably same plateau I saw from the hill near Ukivik. Boland's rd. enters the Dismal Lake basin through a rather narrow glacier valley about S.W. (true) of our hill. We could not see the narrows distinctly, but as far as I could see there are two or three small lakes at the head of Kendall river, some are in direct connection and some are draining into the other system and consequently of a higher level. To the N.W. we could see where the lakes or the basin trends towards west. No caribou or even signs of them seen since Big Stick Island although we have seen much good reindeer country. Broke camp and started at 10.30 p.m. It soon got too dark and we could not see much of where we were going. We went west of the hill and down on the nearest lake, made a portage and came down on another lake going about due north for what we thought was an opening but found closed.

Thur. May 3 - Turned to the left following the hills and came down on the large lake. The lake we had been travelling on was probably about 3 miles long and was probably about 25 ft. above the main lake. Soon after it got light we passed 3 caribou tracks about $1\frac{1}{2}$ day old. They had been followed by a lone wolf and were going towards the south. Saw 2 - 3 more fresh wolf tracks and one wolverine do. also a number of fox tracks. It had been overcast all night but cleared up towards sunrise. ^ A hail storm passed over the lake a little after sunrise. First hailstorm I remember seeing in the Arctic during winter. About 3 a.m. we came to the narrows in the big lake and saw a number of fresh caribou tracks going north. Went across to the north side. Went up on the first ridge to see if they were in the valley behind. Did not see them but expected to find them there so returned to the sled. Shot an Arctic hare coming back. Tied the dogs up in a bunch to a big rock and went after the caribou. About 2 miles in we saw a small band, - they had evidently come across the lake later. They were all females and yearling bucks and some last year's fawns. We killed 1 2yr. buck and 2 yearlings ditto and an adult female which was all the meat we would require. Olmsted started skinning the 2 year buck for a specimen while I went back for the dogs. When I came down over the hill I saw a caribou track going that direction, an animal that our shooting had driven back, had gone right down towards the dogs. As might be expected they all went crazy and got the rope that held them to the rock off. I did not think the outlook the brightest when I started out on their trail. The trail led right across the lake and up over the mountains to the south. When I came over the foothills I could hear Junior bark but could not spot them with the glasses for a while. Finally I saw them. The rope had caught on a rock.

I started calling them and as soon as they saw me they started back and then got the rope loose. They were all dead tired and looked so guilty that I could not help laughing at them and forgive them the run they had given me. It was 12 before I got up to the caribou. Olmsted had finished the specimen and another one and after skinning the remaining two and feeding the waste to the dogs that were almost too tired to eat we hauled the meat back and camped near the lake on a rocky ridge. At 4 p.m. cleaned the skin for blood and grubs and went to bed.

Fri. May 4 - Woke up at 7 a.m. and started at nine going for the end of the lake where we had seen good spruce from the hills yesterday. It got pretty hot before we got there but the going on the lake was not bad though it was much too hot for the dogs. Went up on a hill on the northernmost point on the south side of the lake. There is a broad valley leading towards N.W. Saw 3 caribou in there, but as we had meat enough for the present did not go after them. Camped at the end of the lake at 1 p.m. In the afternoon we went up on a high hill to the N.W. overlooking all the surrounding country. The summit was 940 ft. above the lake. Away to the north we could see what may be Rae R. valley, to the south and west the whole Dease R. basin. We found the latter only parted from the Dismal L. basin about 2 miles, the watershed being about midways and very low. According to the map Big Stick Island should be about S.W. from here, but what I take to be that place is almost due S. of here. We built a 5 ft. cairn and left a note in a 30-30 shell reading: "Built this cairn today returning to Dease Bay from a reconnaissance trip to Kendall River and Dismal Lakes. Killed 4 caribou on the north shore of Dismal Lake. Elevation of this cairn 940 ft. above the lake." Dated May 4th, 1928. The hillside facing south was almost bare in places. Salix Richardsoni had opened the buds. Collected a curious looking ? Cladonia growing on some gravel hill and and a ?Eritrichium, Carex pedata, misandra, Campanula unifl., Potentilla sp. Tofield., coccinum and palustris and all the ordinary things. Heard a wolf howling somewhere to the south. Back at camp at 8 p.m.

Sat. May 5 - We overslept and did not wake up till 5 a.m. Started at 7 following the small creek leading through a small valley with a steep partly timbered north side and a low south side. The wolves are following us and had evidently circled our camp this morning. The valley is only about 3 miles long and then opens into a cirque formed by a broken ring of very beautiful and undisturbed moraines. The bottom of this cirque is a swamp with 3 or 4 small waterholes. There is no distinct divide and I believe the water from this swamp flows to the Mackenzie and Coppermine River as well. Our course of about 20 W. of S. (true) took us past several low isolated sandcliffs the west and south of which were timbered while the east side was badly eroded by the wind. We kept on till the snow got too soft and camped alongside a small creek flowing through a low flat. We did not set up the tent and intended to make an early start tonight. Olmsted killed a ground squirrel and 4 ptarmigan. I skinned the squirrel for a specimen. It was a ♂ fat as a pig and had a rather obnoxious smell. Evidently already mating. Funny enough none of the dogs except Harding and Noataq would eat it. These two had a couple of feeds of squirrel last summer at Cape Dalhousie and evidently remember them. (Distance probably 10 miles). Started again as soon as snow started to harden at 8.10. The going got worse when we came to low willow flats so when we came to the creek again now flowing between sand cutbanks we tried to follow it considerable water had already collected in the bends and we either had to travel through 8 inches of water or over bare sand. Besides the creek was very crooked. We crossed into the left and had better going. Stopped at 11 to make repairs on the sled and made tea. Start again at 1. We went to the left of a hill we first thought was near Big Stick and came down on a good sized lake (3 - 5 miles long. (Lake Rouviere)

Sun. May 6 - It had been cloudy all night and now began to rain and hail alternately Followed the lake and crossed a series of lakes all striking S - N while we were trying to go S.W. passed a diabase dyke also striking S.W. but the visibility was

too poor to see much from it. We were down in the bottom of the valley and the timber getting too thick so hit through the timber for the left side of the valley and had better going. Crossed a good sized creek coming out through a canyon. Think this is Big Stick Island Creek and that we could see Observation Hill. Soon after started snowing and blowing heavily. Found enough brush for a camp though no shelter. Camped about 9 a.m. glass down to 28.2. Went to bed waiting for better weather.

Mon. May 7 - 9 a.m. - still the same. glass 28.4. Stopped snowing in the afternoon, the wind still blowing hard, but clear above. In the afternoon about 3 p.m. we saw a small band of six caribou, 3 does and 3 yearlings bucks coming down the hillside towards our tent. They grazed undisturbed by our presence till they got about 150 yards to the leeward of the tent and got our scent. We had all the meat we could haul out and the season was so advanced that I thought it doubtful if we would be able to go in for another load of meat. We therefore left them alone. Took two photos when they were closest. Had a hard time to keep some of the dogs quiet. One of the does was lame on the right front leg. If they are local caribou it must be an old injury as there had been no people here for a couple of years. Later when we were getting ready to start one dog to the windward of the tent started to snarl and I looked up and saw what I at the first moment thought to be a caribou fawn or yearling but with the glasses at once saw a lone grey wolf coming down with the wind. He evidently paid no attention to the dog but kept right on. I fired 4 shots at him but missed him. We started at 8.30 p.m. following the side of the valley about S. to W. mag. till we came to the first creek here there was a bare rocky hill that we could not pass and had to go up through the creek till we hit the high land behind. After crossing a small lake we crossed the divide into the valley we came up through going in and came to the end of the brush trail at 12 p.m. Freezing hard and the going good.

Tue. May 8 - We could not find the trail but as the snow was hard where there was any it did not make much difference. We came closer to the river than when going in. Avoiding the open country where the willows were bad and keeping in the timber we made fair time. Down in the lowland the small creeks were running. Back at 3.30 A.m. The snow is almost gone and the lake is dry. Trip occupied 10 days; distance travelled about 200 miles of which about 175 by dogs. I have gained much information of the country as well as of the animal life in it. In the afternoon I fixed up some of the specimens obtained on the trip. 16 degrees F. at 4 a.m.

Wed. May 9 - Put in a few bolts in the sled replacing several that were broken and left together with Olmsted to take the rest of the stuff over from Olmsted's cache. He had been worrying the last few days that bears might disturb the cache. At the same time we intended to put in one or two nets in the N. narrows. We left at 11 and found the ice pretty rotten at this end of the narrows. Put a 19 fath. herring net in through ice about 6 - 8" thick. Everything was O.K. at the cache. Took the last stuff - about 500 lbs. and one canoe that we left at the N. end of the narrows where we found wide open water. I went across in the canoe to see if there was water enough for a net and found from 3 - 8 ft. only. Coming back we looked the net over but found nothing in it. When we set the net there was a very distinct current or tide that swung the net about $1\frac{1}{2}$ fath. out of the line of our holes and made it hard to run the long pole through. Now the net was out to the other side - the current this time going in i.e. from W. to E. through the narrows. The narrows are here about $\frac{1}{4}$ mile wide and where the net is about 15 ft. deep. Cannot see what makes this current unless it is a regular tide caused by flood and ebb. We must make some observations with two stations - one in each entrance to the bay and occupied at the same time with hourly readings. Net was set at about 2 p.m. and revisited at 9 p.m. We saw tracks of an otter near the north end of the end of the narrows. Only life seen was one ground squirrel - first one seen in the timber.

Many fox tracks, snowshoe rabbit tracks and old moose tracks from last fall. Min. 7 degrees F. Snow is not off the ice yet. Glare ice in places caused by overflow during the mild spell. Snow hard and going fine. Noticed Cass. tetr. in the woods near the cache.

Thur. May 10 - Fine day somewhat warmer than yesterday. Started on a runner sledge for the lake. Found some hewed boards and planed the runners out. Min. 14 degrees F.

Fri. May 11 - Warm. The creeks are running again quite a bit. Went out to visit the net. Ice getting pretty rotten nearer to the net. There are herrings. We caught 13 and one small trout. The herrings only averaged $\frac{3}{4}$ lbs. Went round along the shore to the north end of the narrows and set a 19 fath. 4 inch net from the canoe we had left here. Current running out 2 p.m. I am getting more and more convinced about the tide. I have noticed a decided bulging up of the ice between some of the islands also there is certain cracking and noise in the ice when and after the current changes. Must try some measurements. Worked on the sled after we came back. Distance 15½ miles. Min. 22. Slight wind from west.

Sat. May 12 - Clear in the morning - thin clouds in afternoon. Wind from E. and S.E. Up early to get observation for meridian and time. Made double sets both with the transit and sextant. Also obs. for lat. at noon. My last lat. gave 66 degrees 52 minutes 29.7 seconds and today I got 66 degrees 52 minutes 29.5 seconds which must be considered sufficient accuracy i.e. showing that my adjustment of the sextant is O.K. The obs. for meridian gave 49 degrees 5 minutes 27 seconds var. We cut some strips of galvanized iron off a gasoline drum for the sled and put 5 braces on each runner.

Sun. May 13 - Started snowing quite heavily in the early morning and continued with a short break at noon till late in the afternoon, then 4 - 5 inches of snow. Got cold at night. Wrote all afternoon. Went out at night looking for the trail towards McTavish Bay that Boland mentioned to me. Could not find it and doubt if there is any blazings or marks of it. Much wood has been cut within a few miles radius of the houses and after that there is a swamp about ½ mile broad and here all traces disappear. Went about 3 miles and then struck thick timber with heavy under brush of willows that would necessitate some cutting to get a dogteam through. Back at 2 a.m. Temperature then zero.

Mon. May 14 - Clear and cold with easterly wind. Olmsted went to the nets alone and I finished the runners and put shoeing on and planed and cut out 11 crosspieces for the sleigh. Olmsted back at 7 p.m. with 15 herring and 2 trout, all from the herring net. 3 days catch. There was not a fish in that other net. Th open lead had all frozen over and there was danger of losing the net so he pulled them both out. Went out again at night looking for the trail and found one that could be followed for about 1½ miles but then disappeared in the swamp. In spite of the cold weather the volume of water in the creeks are increasing and the small creek behind the house cannot be crossed with a sleigh without difficulties so it would not be of much use to make the trip across to McTavish Bay even if we found a trail. In spite of the cold - last night zero, and now at 12 plus 3 degrees F. The willows or rather one of them S.Richardsonii is not checked. The buds are almost one inch long and would be flowering in a few days of warm weath The branches and twigs are frozen hard and so are the buds and break off like icicles. Saw the first Lappland longspur today.

Tue. May 15 - Cold and wind from E. min. zero last night. Finished the crosspie and assembled the sled. Went at night out with the sled down to the mouth of Dease River and up as far as Douglas Bros. shack. It is still in fairly good shape though windows and door are missing. There is a very well built fireplace built in real style and kindling was lying ready for starting a fire. We were

cold and had a good fire before we left. There is another much older shack near this one. (Hep Hudson's). The lower part of Dease River is wide - over 100 yds. and gives you the impression of a good sized river. About 2½ miles up at the first rapid where the houses are it narrows into a quite moderate sized creek. Quite a lot of water running now though the lower and wide part is dry. Back at 2 a.m. with a good load of wood.

Wed. May 16 - Made a pair of handlebars for the sleigh and lashed them on. Also fixed the speedometer to fit this sleigh. Somewhat warmer - about 20 degrees last night. Went up to the diabase rock at night looking for a raven's nest. Found it on the south east side on a little shelf easily accessible for a camera: 5 eggs. Shot a small lark like bird coming back.

Thur. 17 May - Fine day. Wind from S. and S.E. almost calm at noon. Went up to the raven's nest and after taking some photos shot them both and took the female. The male fell way over in the valley and could not be found. Went up to the nest and took some photos. Took nest and eggs. In the afternoon skinned the raven and the lark and blew out the eggs. Cut a hole out in the bay and put a pole down to see if any tide is noticeable. Ice 40 inches thick. Min. 24.

Fri. May 18 - Fine and warm. Took several observations last night and found several inches change in the tide. Changes very rapid and the method not adequate. Put in a better pole with an inch rule attached to it. Started taking hourly obs. at 10 a.m. Olmsted went up to cache to take his traps and the other canoe on his way back brought the canoe and the nets from the narrows back to camp for drying. Went up to the diabase rock looking for some waxwings I had seen yesterday while waiting for the raven. Found the flock and shot two ♂ and ♀ also shot another lark. Trapped one squirrel. Took tidal observations all day and skinned the specimens taken. Min. 24 degrees.

Sat. May 19 - Kept on with the hourly observations taking turns, one sleeping while one was watching. Started snowing early in the morning. Olmsted had the watch from midnight till 4 a.m. when I took it over again till noon. Cleared up in the afternoon and turned cold. Max. 34. Min. at 10 p.m. 15 degrees. N.E. wind.

Sun. May 20 - Dull and grey day and raw cold. Kept the observations going. The changes are very great today and the curve looks very peculiar. Trapped another squirrel. At night put up the tent over the tidal gauge so that the instrument could be read from the sleeping bag. Slept out there taking hourly and some semi-hourly reading from 12 p.m. to 10 a.m. on. S.E. Wind, max. 22 degrees, Min. 7 degrees F.

Mon. May 21 - Dull and grey, wind went over to south and turned gradually warmer. Took my traps in. No squirrels. I believe I caught the only two around the place. Skinned the one I caught yesterday and a Lappland longspur I shot today. Tidal observations going on. Snowed a little in the afternoon. Max. 37. Min. 7. My stomach is giving me trouble again. I do not know for what reason. Tried to keep a diet of light digestible food, cutting out meat.

Tue. May 22 - Warmer, dull and cloudy in the morning. Went out to the south channel as far as the high rock at this end of the narrow. From its top I could command good view of the narrows and this side of the inner bay. South of the narrows a spur of the hill of the mainland comes out to the coast and my hill is probably part of same formation. Laurentian, I believe. There is a number of lakes with a small river or creek that comes out near the old mission buildings. Saw a few rat push-ups in one of them. Noticed a few small birch trees (B. papyrifera) about 3 - 4 inches thick. Also aspen (Populus tremuloides) in a very dwarfed state only a few feet high.. Further Jun. horizontalis that Preble mentions

from Leith Pt. on the south shore of the lake. Saw a solitary Canada jay, the first I have seen since we left for Dismal Lake in April. It presently started raining and soon turned into heavy snow. On my way back stopped and picked up a load of driftwood on the beach. Everything wet and slushy. Max. 45. Min. 25.

Wed. May 23 - Dull and grey, but dry. Fairly warm. Max. 44. Min. 31. Snow thawing rapidly. First swans passed. Also flocks of herring gulls and geese seen. Discontinued the tidal observation at noon. Took the tent and my bed up from the ice.

Thur. May 24 - Strong wind from S.S.E. Max. 48. Min. 31. Thawing tremendously. The ice on the bay is covered with water from the creeks 3 - 4 inches deep as far out as the islands. Went up the large creek and cut across to the diabase rock ridge and came back over the ice. Much water in the bush and even the small creeks almost impassable. Very little life seen. From the rock watched a fight between the small sparrow hawk and two ravens in which the hawk came out victorious, the ravens taking a hasty retreat. About 6 p.m. Olmsted saw two caribou across the bay still on the ice. They were running hard towards the north shore. Not much hope of getting them after they reached the bush. We followed them a couple of miles but had no hope as they would have crossed the Dease River before we got across the bay. Following their tracks back we found that they had come out on the south shore about ½ mile from the cabin and actually had been within 200 yards from the cabin before they got the wind of us. The dogs were all tied up and we were back in the cabin. Olmsted painted the canoe. Took observation for time at noon. Mer. pas ⊙ Max. 36 Min. ?

Fri. May 25 - Heavy rain in morning, cleared up at noon. Gale blowing from S.E.

Sat. May 26 - Rained most of the day. Gale from S. Min. 37. Max. 48.

Sun. May 27 - Overcast and windy. N.W. cold. Min. 37. Max. 41. Clear in afternoon. Clouding up towards night. Went across to the bay in the afternoon and climbed the hill west of Dease River. Several lakes and sloughs partly open. Saw 15 - 16 rat push-ups - 7 right in the estuary of the river. Spring is well established, the woods are full of birdlife and song and life. Several flocks of snowgeese passed. Saw first swallow. Still some snow in the bush especially on north side. Grass has started to sprout and so has Chamaenerium angustifolium . All snow has rained off the lake ice and there are several holes, thawed through (Gas holes). Brought back a big sledload of wood.

Mon. May 28 - Rain all day, not heavy but too wet to travel. Made preparations for survey trip as far as Narqa Island. Killed and skinned a couple of bird specimens.

Tue. May 29 - Fine and warm with S.E. wind. Left at 10 a.m. for south narrows. At first island I went up on the hill to put up a signal while Olmsted continued with the dogs looking for a place to put in nets. I followed the shore of the nearest lake and came out to the narrows at the creek. 6 - 8 muskrat push-ups. Lake open along the shore. Hundreds of old squaws and other waterbirds. Otter track at mouth of creek. Walked up to west end of narrows where Olmsted was waiting. Open water several places but none suitable for nets on this side, so crossed to island side where I also wanted to establish other station. Camped here. Went up on the hill and took bearings with the transit and put up flagpole. Elevation 180 feet. Cannot make out just what this formation is. Top of ridge looks like basalt or diabase, columnar structure, brown. At foot of the wall like ridge is a broad, terrace ~~built~~ of what looks more like quartzite than anything else. Cream color - scratches steel. There are two quite large lakes on the island visible from this pt. one on west and one of east end both draining to the bays at each end of narrows and located in the draw or valley extending up from bay.

Bird life plentiful - sparrow hawk, owl, whisky jacks, robin etc., etc., in the open water of the narrows, squaw and blue bills, ducks and black ducks. (obs. look for Triglochin this summer sp. of Juncus near the shore of our camp place, blazed tree marks spot.) Distance on wheel 9 miles. Went over in the evening to the open water and O. set the whitefish net at the nearest pt.

Wed. May 30 - Fine and warm with light breeze from east. Broke camp and left. The net only caught two trout and a jackfish. Olmsted set the other net farther out. At the narrowest place the ice is almost gone and we had to creep along the shore where the remains of it was on the bottom. Crossed to the main pt. west of narrows. Went up on the highest hill and took sights. Set up a flag and cleared a bunch of trees obscuring the visibility. Doubt if this will be visible from Narqa though the signal on Fat Island shows plain from here. Left again at 16.20 going straight to Narqa. Saw a fresh caribou track midways going to an island. Went up to island and walked over it but saw no signs. Ice fine; candled but dry and smooth except in places where remains of snowdrifts are left. Stopped on south side of the large island 20.40 and camped. Set four hooks for trout.

Thur. May 31 - Fine and warm. Breeze from east at noon 14.5 C. at 22 8.5C. Obs. for lat. at noon from 14 - 19 on the hill working with the transit. Alt. 890 feet. Olmsted went over to the north and west hills and put up signals. Caught two trout on the hooks - one measuring 41 inch. in length.

Fri. June 1 - Up 6.30 started obs. for meridian and time. Went up to west island and went up to sta. A, and worked the transit, later moved to sta. B. on the North Hill. Fine and clear light breeze exceptionally high visibility. Big Pt. shows up fine. Returned to camp at 16 to finish observation. Calc. obs. in evening. Snow almost off on the lowland but the mountains on the north shore are still white while hardly any snow remains on the low land to the south none of which is over 400 ft. Total distance 10 miles.

Sat. June 2 - Fine and warmer than yesterday. Wind light from west. 13 o'clock 19½ degrees C. Went out east of the island and measured out a base line with the chain - "worked the transit" getting the 3 stations that form a triangle on which my triangulation is based. Broke camp and started across to the north at 15.15. Set course for Fat Island. Took a series of soundings, the deepest of which was 36 fathoms. The south side averages about 12 - 16 while the north side is deeper. On Narqa Empetrum and ? Salix Rich: are in bloom. Arrived at Fat Island 19.50 and camped. Set the hooks and had to chop two holes. Olmsted shot 3 ptarmigans. Think spring is more advanced here. Total today 21 miles. Temperature 22 O'c. 9½ degrees C.

Sun. June 3 - Dogs woke us up at six and we found that two caribou out on the ice were inspecting the camp. The wind was from east and though the dogs were pretty noisy they did not have our wind and were not disturbed at all. I shot one from the sleigh on the shore and wounded the other one that fled across the bay. The ice was too hard on the dog's feet to chase it withdogs so I followed. It crossed the 3 mile bay to the east and I found and killed it in the bush on the other side of a small lake. Went back to fetch the dogs and sled and hauled it in. They were both yearlings and in pretty good shape. The meat was most welcome as we were out of meat and almost out of grub and dogfeed, besides the dogs have been living on cornmeal since we came back from Dismal Lakes. Took obs. for latitude at noon and went up on the hill to the signal we erected this spring and worked the transit. Olmsted skinned the two caribou and accompanied me in the afternoon. We are drying some of the meat. Clear and fine day, light east breeze. Almost uncomfortably hot during the day. 15½ degrees C. at 13 o'clock. Anemone parv. 2 Salix and leatherleaf are in flower. Saw first loons.

Mon. June 4 - Clear and fine day. Almost calm. Too hot to travel so stayed in camp all day. Went around a little and took some photographs. 22½ degrees C. in the afternoon. The flies are a pest. Bumble bees are numerous - have only seen one sp. of Lepidoptera but the gray moths are common. Olmsted cut up some of the meat and put it up to dry. Left with the dogs for Fat Island bay in the evening. The ice was fairly rotten on the north side of that bay and there was an open hole in the middle of the narrows. Two small creeks enter the bay and had opened up the east ½ mile of the bay. Numerous ducks and 4 swans were seen there. The bay is not very deep and on the north shore I saw dense growths of Potamogeton sp's and Ran. confervoides on the bottom. From the entrance to the bottom the bay is 6 miles long and from 2 to 1 mile wide. A bold headland that looks like an island separates the main bay from a much narrower, prob. 3 mile long arm that cut in on the east side. This was almost entirely open. Climbed two hills to the east and got a fair idea of the land. No heights over 200 ft. To the north the land rises in terraces to probably 600 ft. and is almost barren and rocky but not broken. The divide is probably about 6 - 8 miles from the shore. Both creeks drain a valley between this above mentioned hills and the one on the north side of Dease valley. Back to camp at 2 a.m. on June 5.

Tue. June 5 - Broke camp and loaded up the sled. We left the tent and some dry fish, about 100 rounds of ammunition and some camp outfit to be used when we come back this way for the north shore. I intended to make a trip inland with pack dogs as soon as we can get ready and figure on remaining on the north shore till Bob comes up in July. Set course for the south narrows going behind Midway Island taking soundings as we went along. Arrived at the west end of the narrows and found the ice rotten and had to travel through the bush for about a mile till we found the ice open enough to bring the canoe down. Olmsted went up and got it. An east wind is pressing a lot of broken up ice down. Slept till 2 o'clock. Olmsted took the canoe with most of the stuff to the other end of the open water where we had camped on out way out. Olmsted took the nets out. The herring net was in deep water and hadn't caught a fish while there was 12 in the other net. Trouts mostly and an odd jackfish, whitefish and bluefish.

Wed. June 6 - We found the head of the bay wide open about three quarters of a mile out from the houses. Landed first on an island and loaded the canoe up swimming the dogs ashore. Spring certainly has advanced in the week we were gone. Grass is getting green and over a dozen plants are in flower. Cham. angustifol. that just started to sprout when we left is 8 inches high. Olmsted went up and set a net across the mission creek. In the evening went with the canoe down to the mouth of the Dease and travelled around in the delta some. Saw a few rats and killed seven. Found a robin's nest with eggs. Collected several specimen. The self-registering therm. left at the house showed during our absence Min. 33 and Max. 79.° F.

Thur. June 7 - Back at 4 a.m. Visited the net and got 27 fish mostly jack fish but also whitefish and bluefish and some suckers. The water in the creeks is 15°C.! Observations for latitude and meridian. Ice thawed out about a quarter of a mile today! Found all the meat we had left spoiled and had to feed it to the dogs. Flies are very bad and meat spoils in a day. Started on the computation of the triangulation.

Fri. June 8 - Since we came back we have been sleeping daytimes and working nights but shifted back again as it is more convenient when you have indoor work to do. Continued on Karqa Island group. Olmsted started making dog pack sacks. for the trip inland. There is an old sewing machine here that he has brought in shape after considerable trouble with the tension. Temp. 40 - 63°. Wind blowing hard from North. Cloudy.

Sat. June 9 - Blowing hard all day from North. 38 -49° F. Raining part of the

night. Olmsted made pack sacks. Worked on the map. In the evening went up to Diabase rock and did some collecting, mostly lichens. Following phanerogams noted: Stellaria longipes, Minuartia biflora, Carex sp. C. sp., Salix ?chlorocla dos, S. Richardsonii, S. sp. Anemone parviflora, Andromeda polifolia, Arctostaphylos rubra, Rhododendron lapponicum, Chrysosplenium tetrandum, Eriophorum angustifolium, Petasites frigidus, Picea canadensis, Potentilla nivea, Saxifraga tricuspidata (hardly out) Alnus ~~incana~~ crispa, Betula glandulosa, B. ? papyrifera, Eleagnus (Lepargyrea canadensis, all c. fl.

Fishing is excellent, we got about 25 fish a day and the dogs are all - even Wolli too fat and can hardly eat all the fish. Out last meat is gone. Saw a fresh moose track in the mission creek. First night the sun didn't go down! Ice moved a little in the inner bay. Open water reaches over a mile out.

Sun. June 10 - Cold and stormy, snowing at times wind from same corner. Worked on the map. Collected a few birds and skinned some. 33-41° F.

Mon. June 11 - Finished my work on the map i.e., I have now sketched out as much as needed for the understanding of my notes. Went over to the island and brought the sled back. Collected a set of Duck-Hawk eggs on Cache island. Cold and storming. Snow in squalls. 33-45°F.

Tue. June 12 - Raining and snowing in squalls. Packed up and hope to leave for the north shore in the morning. 37-51° F.

Wed. June 13 - Fine and nice day. Closed the buildings up and nailed the windows up etc. Loaded the two canoes up and left 13.20. Had to go round all the little bays as the ice was quite close after we got beyond Dease River. Stopped for lunch near the old chimneys of Ft. Confidence built by Dease & Simpson. Found solid ice at the end of the narrows and transferred the two canoe loads to the sleigh that we had carried on top of one canoe. With the two canoes it made quite a load - about 800 lbs. I think. Crossed two open cracks or leads and arrived at our camp at Fat Island about 24 o'clock. Everything was o.k. Distance in canoe 12 miles, sled, pushing 10. Both the dogs and ourselves were pretty tired. The ice is very bad on the dog's feet.

Thur. June 14 - Fine, wind light from west, rather cold. Slept long. Broke camp and started for the north shore at 17 o'clock. In addition to the load of yesterday we added the Fat Island camp. Followed the coast and entered the large bay on the north shore about ten miles west of Fat Island. After turning the point we went about straight north and landed in a small bay with a very small creek. Water in bay shallow. A larger creek enters same bay. Runs over a rocky hillside in a series of small falls. After supper Olmsted fixed up a net and went out to set it. I went to the head of the bay and walked over the ridge inland for a few miles following the large creek. About one mile up it runs through a small lake about one mile long and here turns to east and flows through a willow flat. Country a broken plain, rocky and swampy sparsely wooded. Saw caribou and bear tracks on lake shore coming back.

Fri. June 15 - Back to camp 4. C. fl. additional to those noted at Dease B. Pedicularis lanata, Eriophorum vaginatum, Primula bor. P. ?sp. Scirpus ? uniflorus, Carex scirpoides, C. vaginata, Cass. tetr. C. sparsiflora, Dryas integrifolia. Woke up by swarms of mosquitoes. It was freezing a little when we went to bed but as soon as the sun got hot the mosquitoes got busy. Although the first mosquitoes were noticed on the last days of May they have not bothered before. Put up my mosquito bar and went to bed again. Got up in the afternoon. Not one fish in the net so decided to move camp over to the waterfall where deeper water.

Packed up and crossed the two mile bay. Trolled across and caught two trout, shot 4 squaws. Camped on the west side of the creek. Olmsted set the net again. We went up over the hill and went up a couple of miles. Same type of country as I saw yesterday. Very sharp rocks all over. Will be hard on the dogs' feet but hope the formation changes after we get in a day or two. Olmsted got 8 fish-6 whitefish, all good size and about 2 trout - trolled up and down the bay a couple of times without success. Tracks of bear, wolf and wolverine and caribou on the lake shore. Fine day. Easterly wind in p.m.

Sat. June 16 - Fine day, light breeze from west. Observed for latitude at noon. 67° 1'59. Olmsted got a big catch viz., 10 trout mostly very large from two feet to three feet ten inches, 23 inch girth and six "mammoth" whitefish about 8 lbs. apiece. Dogs cannot eat the fish as fast as we get them so Olmsted cut up most of this morning's catch of two to three hundred pounds of fish and hung them up. I started on a bear proof cache by cutting the tops off two spruce about sixteen feet up. We notched holes through about twelve feet up and ran a cross piece through for beams and put a bottom up that protrudes four feet out from the tree. Mosquitoes rather bothersome in evening when wind went down.

Sun. June 17 - Fine day, calm and hot. Finished the cache and packed up and put everything into the two canoes that are freshly painted and therefore attractive to bears on top. In the evening a fresh wind sprang up from north east and drove mosquitoes that had been pretty aggressive all day into the bush. Packed up grub - i.e., cereals, sugar, flour and grease, tea for about ten days. Dog feed - dry fish for about four days. We are not taking sleeping bags or tent but tarpaulins and mosquito bar. Took a feed of the still pretty fresh fish on the stage and left the rest to the bears.

Mon. June 18 - Started 12.20 (0.20) Had little trouble in getting some of the dogs up over the hills but after they first were started they were alright. Low wet country behind the hills close to the lake. Though the formation did not change the dip of the rock from ⊥ changed abruptly to ⫧ and we entered a system of large rock flats almost level. Here and there a corner is broken up or the junction between two systems occupied by a creek and a long narrow lake. About six miles from the lake the limestone formation was replaced by sandstone. First a series of bright red, soft - rather coarse sandstone that later changed into a fine grained grey hard sandstone. We passed a number of creeks all running parallel to the coast and west. Stopped at a large creek about ten miles at 6.20. Betula gland probably is the predominant of this plain. The spruce is mostly stunted owing to lack of soil but wherever sufficient soil and shelter is found fair sized spruce up to ten inches are seen. Few low aspen on red sandstone hill.

Tue. June 19 - ~~[illegible]~~ Camped at eight and slept to eighteen o'clock. Packed up at 21 o'clock and forded the creek taking everything across in two trips. Crossed a number of small creeks without trouble. Formation changed again. The rock disappeared and was replaced by low rolling sand and gravel hills probably of glacial origin although in one or two places I thought I saw old shore lines in form of bench. Timber is gradually disappearing and the draws are occupied by low wet willow brush. Had to go through much water and nearly all the stuff got wet some. One should have watertight grub sacks for this kind of travelling. It is interesting to notice how everything is getting late as we proceed. Towards end of one day's journey only few flowers were out viz., Salix, Anemone, parv, Scirpus caesp and a few others. Also of course the ground is much wetter since the snow has only been gone a few days. Plants of particular interest were: Parrya nudicaule, Eutrema both on limestone. Poa alpina, Corralorrhiza sp. Myrica Gale on sandstone.

Tue. June 19 - Stopped an hour for lunch. The squirrels disappeared altogether after we left the lake owing to absence of sandhills. After we left the rocky

country they are getting abundant again. Saw tracks of a few caribou, not very fresh, but otherwise signs are surprisingly few. At 3 we again sighted the two snowdrift hills visible from Narqa. At 5 we were stopped at the very foot of the hill by a veritable river over fifty yards across. Fording was out of question as the water in the rapid was over three feet deep. We shall have to make a raft. All pretty tired so camped. Fine day with slight breeze from east. Went to bed at ten intending to take latitude at noon but woke up a few minutes too late. Fed the dogs a feed of half dry fish. Fresh tracks of wolf and fox on the river bank. Water in the river was about eight feet higher a few days ago so ice must have gone out quite recently. Up again in the afternoon. Olmsted started cutting dry logs for a raft. Slow job as we only brought a hatchet. The raft was built and the camp broke at 22. Loaded up and crossed with no difficulties. Hauled the raft half out of water, loaded up the dogs and started up the "two snowbank hill" that we have been travelling towards since we left the lake. This hill deserves description in special. It is a good example of the hills back of the rocky forland. It is almost circular in outline and about two miles in diameter and probably stands about two hundred feet up from the surrounding plains. It is doubtless a moraine and is built up of coarse sand, gravel and clay without any stratification. The boulders are of sandstone mostly but limestone, quartz, granite and porphyry is also found. Several parts of the hill have caved in leaving craters and canyons, some of which dissects the hill and the floor of which ~~are~~ are occupied by water or swampy ground. The caving in undoubtedly occurred when a nucleus of the glacier (dead glacier) was left in the moraine and covered by it gradually thawed out. Except for the slopes the steeper of which have not been consolidated by vegetation yet, the hill is fairly covered with vegetation. Few stunted almost prostrate spruce carry on a miserable existence. Many succumb in the fight with the north east wind with no snow protection but the surviving reproduce seed and new growth is found in the shelter of the dead or dying ones. The bulk of the vegetation is formed by Dryas integr. densely overgrown with Carex rupestris.

> Betula glandulosa, Myrtillus, a few species of Salix, Arctostaphylos rubrum, Lupinus sp. two or three species of Oxytropis, and Astragalus, Potentilla sp. P. fruticans, Lesquerella arctica, Draba alpina, Dr. cfr. magellanica bor. Androsace septentrionalis.

From the hilltop you command a birdseye view of the whole country. Whole of Dease Bay as far in as Fat Island with most of its islands show up plainly, Caribou Point and Big Point. The hills north of Good Hope Bay and probably thirty to forty miles to the north and east. Stunted spruce are seen in protected places about ten miles north and west of the hill and one or two quite good growths of a few 100 trees each are seen almost as far as spruce grows. The whole country, the timber as well as the barren is thickly dotted with lakes mostly small and none over two to four miles long. The water courses are extremely difficult to follow. I think our river can be followed to the west as far as the foothills of Centre Mountains where it either turns to the north or else received a tributary from that direction. Seven to eight miles to the north west is a very characteristic landmark viz., a pyramidal gravel hill on top of a low rounded foundation. This hill is slightly higher than our hill and of similar formation. The peak, shaped like a distinct pyramid raises about one hundred feet over the foundation has one corner facing south. A patch of vegetation shows on the south west side while the other sides are devoid of vegetation. I decided to make camp here and made one or two trips out on the barrens from here. Nothing could be learned by proceeding much further as the barrens undoubtedly are the same till about twenty miles from the coast where the proximity of the ocean would be noticeable. This line could almost be ascertained from here by a low fog seen in the direction of the ocean in N.N.E. 50 to 60 miles off.

Wed. June 20 - Leaving the dogs we started out in the direction of the Pyramid

Hill to have a look at the barrens and to see if there was any game. From a hill about six miles to the north we spotted five caribou grazing out in a swampy flat to the N.E. They were moving around quite a bit and were evidently bothered by mosquitoes. I set out stalking three of them that grazed together. They were all bulls and were very wild on account of the flies. Shot one a four-year old bull but had to follow it a couple of miles through swamps and lakes before I could finish it. Took some meat and left the rest in a cold stream and started back intending to go back with the dogs and after feeding them pack the rest of the meat back to the camp. The barrens are very wet and the snow has only disappeared a short time ago. Back in camp at 17 o'clock. had a big feed of meat and went to sleep.

Thur. June 21 - Another fine day. Same light breeze from east. Observed for latitude at noon. Approx. 67° 12' 38"3. Collected plants in the vicinity in the p.m. Wind went down and clouded up heavy in the evening. Very hot and flies terrible. Had intended to go over and get the rest of the meat but with the prospect of rain, no wind and flies, the gain of one feed for the dogs hardly seemed to outweigh the expenditure of energy. Instead we broke camp and started back at 23.30. The raft was o.k. and we crossed with little trouble.

Fri. June 22 - Flies were a holy terror all night - almost as bad as Mackenzie delta. Travelled by compass and arrived at the next creek hitting about fifty yards above where we crossed going in. During the few days a number of flowers that I did not see have been in bloom. Forded creek and camped at 7.45. Stayed in the mosquito bar and tried to sleep all day. Flies the same in the evening. Wind died altogether.

Sat. June 23 - Same, hot, but in the morning a little wind came up from south and south west. Started at 5.15. Followed same route as going in. Noticed a number of plants I hadn't seen on coming in in flower now. Also saw a number of "bluefish" in the first creek south of the large one. Back at the cache at 9. Everything was in order and no animal had been close. Took down the canoes and what else we needed leaving the rest of the stuff on the cache. Went out as far as the western point looking for a camping place with less mosquitoes. Ice against the point. Camped on this side of point. Very hot. Thunderstorm in the afternoon. Cooled off after we had a shower.

Sun. June 24 - Started blowing hard from N.N.E. Had to anchor the tent more securely, my canoe hauled out on the beach blew across the small bay to the west of the tent about one hundred yards, but a few scratches in the paint was the only damage done. Walked over to the fish stage near our cache and fed the dogs and started collecting plants when it started to pour down. Olmsted walked down the bay to the west a few miles looking for game. Cleared up in the p.m. Out collecting again. Laid out specimens in the evening. A large per cent of the flora is flowering now. Dryas integrifolia, Rhododondron, Pedicularis lanata, Anem. parv. (The latter already going to seed) are brightning up the otherwise rather bleak country.

Mon. June 25 - Found that my canoe had got a leak the other day when the wind blew it over the shore. Three ribs are fractured and the canvas torn a little. The hole, however, was easily fixed with a patch and shellac. Went across to the cache and took a series of photographs of flowering plants with the large camera. Calm and warm day to the photographing a rather trying job on account of the flies. Olmsted set the net close in to the mouth of the creek and caught 18 large trout and 7 whitefish in one hour. We are getting ready for a canoe trip up the coast as far as entrance to Smith Bay about 75 miles from here. We are leaving one canoe and are on account of the uncertain travelling taking three weeks grub. Ice has shifted in the lake and the ice undoubtedly shall be against some of the points. Started blowing hard from N.E. in afternoon. Took

some specimens and Olmsted's canoe over to the cache and brought some stuff back. Banded a set of nestling robins about a week old.

Tue. June 26 - Blowing from north east. Clear and fine day. Went up on the hills behind to see if the ice was against the next point. No passage was found and we remained here. No change is likely to occur till the wind changes to north or west. Found two more sets of nestling robins and banded the largest. Did some collecting and laid out specimens.

Wed. June 27 - Fine day. Wind went down in afternoon and went through south and west. Decided to take a chance on it staying in that corner so broke camp and portaged the outfit across to the west side of this point we are on. Before we had it all over the wind however changed back to East. Since we had the stuff moved we went up as far as we could about one mile from next point and camped. Ice against the shore. Forgot to leave a memo at the cache so walked back and left one. Banded a set of white head sparrows and one robin. Collected lepidopterae this afternoon. Mosquitoes as bad as ever all day in spite of the easterly breeze.

Thur. June 28 - Calm and hot all day. The ice had loosened up some and with a good deal of pushing we wormed our way for a few miles past the perpendicular cliff of ? Limestone Point. After two hours we could go no further and consequently after climbing the hill and finding the bay on the other side full of ice we camped. The ice in the whole of Dease Bay has broken up and that is what causes us trouble. Before there was a narrow belt of open water along all the shore and the islands in the bay were the "nails" that held the ice. Then first some of the pressure ridges opens up and gradually the whole bay breaks up in large strips from shore to shore. At present the central part is still composed of large ice fields while those towards the shore have been ground up in small cakes. Ice is yet about three feet thick. At 8.20 the ice opened again and we continued and we stopped again in the next bay. Today about eight miles. Took a walk up the shore for about two miles in the evening. Mosquitoes were busy all day, no game.

Fri. June 29 - Had calm all day. No movement in the ice. The blackflies have started too. This is the earliest I have ever seen them. With them and the mosquitoes I expect we can look forward to a pretty hot time.

Sat. June 30 - Calm all day. Nothing doing. Walked back along the shore to the last limestone exposure where I had noticed a bed of shale. Nothing of interest. Olmsted walked to the west looking for game, but saw none. At 23 o'clock a light west wind came up and ice at once loosened up soon. At midnight we could break camp and start.

Sun. July 1 - Much trouble with ice. Several times rounding points had to pull canoe a distance over the ice. Shot two geese this side of Caribou Island. Two miles west of the point ice fast against the shore again. Camped. Big flock of geese came from North headed for Caribou Island. Went up but couldn't get close;no cover. Went out on the point and sat waiting for them to move up that way. Finally after over an hour's waiting got a shot and killed two ganders. Took observation for latitude at noon. Took some plant photos. Dead calm all day.

Mon. July 2 - Ice loosened again during last evening and we started soon after midnight. Hope to make the river about five miles. Dogs have had nothing to eat since we left the main camp. Not much luck. Only got round the point and found ice fast again. Shot three geese. We have had no meat since we came back from the barrens and cannot put a net in the lake on account of the ice. The geese are pretty tough just now but tastes good all the same when you have lived on bannock and rice and cornmeal for ten days.

Tue. July 3 - Calm and hot all day. Ice fast against the shore. Mosquitoes are so thick that the dogs wander restless around and hardly ever stay in the same place for more than a few minutes. Their noses and eyebrows are swollen - poor brutes! Once in a while one will sit down and howl. Though starving they are some of them still retain their aversion against fowl and will not eat raw geese bones, etc. In a stunted spruce behind the tent is a redpoll's nest with five eggs that hatched today. We are getting to be on great terms with the happy parents. When we come close to the nest the proud mother will even allow us to move the concealing branch though to do that my hand is a few inches from her and the nest. First time she was evidently "on the jump" but after that she is quite at ease and looks up quite confident. Out tent and sleeping bars is a great feeding ground for these and other pairs of redpolls and they undoubtedly pick off quite a few mosquitoes that sometimes are so thick on the canvas that it looks from the inside as if an extra sheet of canvas has been spread over the tent.

Wed. July 4 - Same as yesterday. While we slept the dogs broke the grub box open and stole part of a can of butter and some lard and tore several sacks open and finished most of our uncooked rice. A thick fog is hanging over the ice and visibility is low. In afternoon we started west on foot for the river that we know is only about three to four miles further up taking the net and the dogs along. By rafting we figured on setting the net across the mouth of the river. About one and one-half miles up we found a small creek that we saw this winter but had not thought about. Also found open water from here on the beyond the river. Forded the creek with a line and Olmsted set the net. He stayed there while I went back to take the canoe up at first open water which I hope may come soon. Had a swim in the creek.

Thur. July 5 - An offshore wind came up in the early morning but only lasted a few minutes. Day calm and hot like yesterday. Olmsted came down late in the evening visiting. He had caught 16 whitefish and a fish duck.

Fri. July 6 - About midnight a light north east wind started blowing. The ice at once responded but jammed before we could get enough water to round the point. We had loaded up and forced our way down to the point by breaking the ice with a heavy pole. Here further progress however was stopped unless the wind got the ice moving again. Olmsted went back to his net and got nine fish. Meanwhile I sat waiting for a chance to get around the point. This came presently and in a lead I got around. Soon after the wind increased to a storm. The ice started to break up some and I had to pull the canoe up on a heavy cake of ice where it was safe and thus drifted down towards the open water in the bay. The foot of the bay where the big river is was all closed by ice so we were content to remain here though there is much willow brush and consequently the flies are worse than ever, even with a storm blowing, but there are fish and the dogs need them badly. They are all in a bad shape on account of the mosquitoes and flies. They are all shedding and very shorthaired. About 8 o'clock the wind went down and it started to rain. Rained all day and cleared up at night. Collected plants and looked after the collection, dried paper, etc.

Sat. July 7 - Calm and hot. The fish is getting scarce and we only caught 7 during 24 hours. Rain. Dogs very miserable. Ice moved out again. Broke camp at midnight.

Sun. July 8 - Only got as far as first point beyond the river. Ice close to the larger point, progress barred. Off the river saw some geese one pair had five young three of which we caught for banding but finding them too small released them without band. In another flock was one remarkable goose, smaller than the rest and with a body much like the Canada Goose. Had yellow bill and feet and brown head and neck. It was in molt. Shot it for a specimen; the rest got on the wing before we had a chance. Camped in the bay. Olmsted went back with the canoe and

set the net in the river. He left the canoe and walked back as the ice was closing in fast. Trip inland a couple of miles in spite of the flies. Few specimens. Banded a longtailed jaeger. Very hot, although faint breeze from West. Olmsted caught about 25 fish.

Mon. July 9 - Calm and hot. "Bull dogs" are out now too. We have now besides the latter not less than three kinds of mosquitoes and the blackflies "no see-um". What a life! My left eye was nearly closed by swelling from fly bites and several "bumps" adorn my forehead. Went up the left side of the river. It is quite a stream, at the head of the delta which is about half a mile deep with two or three channels and several small low islands. All covered with driftwood. Have called the river Haldane River ? . - The river gets shallow and as far as I went there is a series of shallow rapids too swift and shallow for even a canoe at this time of the year though I think there was a lot more water earlier in the summer. This is undoubtedly the river we rafted on the trip to the barrens. It forks - I think at the foothills of Centre Mountains and our river is the N.E. branch while the other drains the plain between Centre and East Hills. The water was remarkably warm. I did not take temperature but it felt quite hot and was decidedly too warm to drink probably over 70°F. The timber which is ordinarily some distance from the lake shores here on the low north shore especially comes out to within a mile of the lake. The river has cut through the deposits of quartz sand and the banks are steep eight to twenty feet. On the left side about one and one-half miles up was a small grove of poplar fifteen feet. Saw fresh caribou tracks. Caught and banded a young ptarmigan. Olmsted got about thirty fish today and pulled the net. Ice has melted away a lot these last two days and there is much open water. After attending to my plants from the trip today and skinning the goose we got the other day broke camp and left at 22 o'clock. Had some trouble and delay getting dogs across the bay this side of point. No serious delays from ice.

Tue. July 10 - Much open water and made good progress except when the numerous bays and points made us go in on around on account of the dogs. A slight wind from East followed carrying a black cloud of mosquitoes with us. Kept on going till we had passed the delta of the large river at Centre Mts. Bay. Camped on the narrow point west of the delta at 7 o'clock. Finished probably 22 miles of which about sixteen or seventeen are "Good". Saw four pair of geese with young. All too small for banding. Shot four last year's non-breeding, having eaten our last meat today. These four were all we saw besides the above mentioned. Through the influence of the river the water in the bay even at some distance from the river is quite warm. At our camp it measured 19°C and when at noon the flies quieted down some I had a nice swim at the same time doing some much-needed washing of my under wear. Olmsted went over to the mouth of the river that I call Long Point River on account of this long and very narrow point about one hundred and fifty yards wide that we camp on. While waiting for the fish to make use of the net Olmsted walked up the river and found it fair sized and navigable for canoes as far as he went (three or four miles). Coming back he took out twenty-five white fish and a number of trout and bluefish, 30 odd fish all told. Not bad for a start! We saw a grey wolf today. Got away before the dogs saw it.

Wed. July 11 - Fine day but a southerly wind had been blowing all night and continued all day so there is not much hope of getting beyond next point Olmsted thinks - so we stay here. He took a canoe load of fish out of the net this morning; 46 whitefish and a bunch of trout. Took the net up. Went out collecting plants and birds. The formation is the same and so is the vegetation only the spruce is totally absent from the lowland although good growth of spruce is found at some distance especially on the creeks and river banks of lower valleys. West Mts. are plenty visible across next bay. They are undoubtedly somewhat higher than those hills we were on on the trip to the Barrens, but as far as I can see they are of same formation, i.e., glacial moraines without any rock exposures and

I suppose as such quite unique both as far as height and extension goes. Wish we could make a trip up on the nearest hill which probably is about ten miles from here. Skinned two birds.

Thur. July 12 - Wind blowing somewhat stronger from same corner. Pleasant day as the wind was too strong for the flies. I am sure the dogs had their best day on this trip. They are all badly mosquito-bitten and have large ulcerating wounds but are picking up fine after the starvation. Found a small pond out on the end of the point and devoted the day to this. Few aquatic plants and the result from my wadings were rather meagre. Utricularia minor, Menyanthes and Ran. paucistamineus and a few bog plants. Sat in cover a couple of hours watching the bird life and later shot a pair of loons and a pair of ducks. When making the skin found they were both female old squaws. Wind went down about 23 o'clock and the flies came out as hungry as ever. Took observations for time and latitude.

Fri. July 13 - Wind south but calmed down again. Broke camp and portaged across the peninsula and were started at 13.30. Had to go a long way into the following two bays on account of the dogs and almost had to make the double distance. A breeze came up from the North East and helped us a lot and for one thing relieved us of the flies. Stopped and made supper. Took a short walk up the hill and found a small grove of Populus balsamifera, Raspberry, Ribes and several other things. Soon after we got started again the wind without warning increased to a young gale. We were fortunately at the time at the foot of the bay. Tried to land but found a double sandbar; got over the first one but couldn't cross the second. Followed it with some danger of getting the canoe swamped. We finally got across by dragging the canoe and took but little water. Camped up in a small creek. Had mushrooms for supper.

Sat. July 14 - Blew hard all night but calmed in the morning. Still too much swell. Went up on the foothills and got a good view of the hills of the surrounding country. The "mountains" are all gravel hills. Glacial moraines! The foothills and the first range wooded to the top. Numerous lakes, S.E. corner of Big Point due south 129 from here. Scented Grass Hill shows up very plain. There is some ice out in the bay but not much. Cannot see if it is against the shore over there. Much surprised at the amount of open water down this way as the prevailing winds have been East. Also Boland told me that Dease Bay was the first part of the lake to open. We could see that the swell had gone down considerable so hurried back and broke camp and were started at 18.30 o'clock. A light west wind soon came up but calmed about midnight. Saw numerous pairs of geese with young but passed them up. Saw 7 non-breeders and shot three. After going out along the point about two and a half miles south east i.e., (actually back) we found the coast very much straighter than it had been before and the dogs could follow without us going into the bays. Stopped and cooked at 24 o'c. Started again at 1.30 and kept going to 5.30.

Sun. July 15 - Stopped at small creek. Off the mouth of the creek at times as much as a score of back finns of big trout showed up out of the water. While I boiled the kettle and made camp Olmsted set the net and an hour after brought in about 200 lbs of trout and two whitefish, one of the latter weighing about 6 lbs. Dogs pretty tired and would not eat much. First night the flies have not bothered at all. Distance about 25 miles of which I guess about 20 are good. East wind came up during the day. Heavy rain and thunder at night.

Mon. July 16,- Raining and blowing hard all morning but cleared off towards noon though wind still too strong for travelling with the small canoe. Started across country for Olmsted's cabin at 13 o'clock taking a little grub and the dogs along. Fine going on old gravel beach lines. Skirted some lakes and crossed a low swamp or overgrown lake with muck and moss knee deep. Timber is quite close to the lake and the "Barrens" are getting quite narrow, also timber much better size and growth than even at Dease Bay. Flora is gradually changing. New species are

coming in and others are getting scarce and dropping out altogether. Arrived at cabin about 17 o'clock. Distance about ten miles. Last few miles travelled through thick forest. Cabin at foot of a large bay. Cabin in bad shape on account of dampness and due to meat left there this winter when Olmsted had figured on returning by ice. The big 23-foot canoe in good shape. While Olmsted was getting his stuff ready went out and did some collecting. Left at 21.20 wind almost gone. Fine and cool evening. We brought a pair of light oars and rowing one man gives the only one-quarter loaded canoe about three miles speed which is much better than two could do paddling.

Tue. July 17 - Rowed the sixteen miles back to camp. Had supper and loaded everything into the big canoe and started east again. A light breeze was coming up from S.W. gradually increasing to a fresh breeze that gave us five to six miles with the sail. Dogs couldn't follow and beach was too rough to pick them up. Continued to the bay where we camped coming down and pulled in in the canoe harbour that we found out near the point. Lake quite rough. Distance today and yesterday 10 miles on foot and 17 rowing and 26 sailing. Not a bad day's work. Laid out my specimens and went to bed. We are getting short on several - in fact most things. Had expected to find matches and tobacco at Olmsted's cabin but somebody cleaned them up and all we found was three boxes of matches and no tobacco at all. We have been splitting our matches for some time already but with the tobacco soon gone we shall probably have enough. We shall not be reduced to starvation although we may be living on fish exclusively before long.

Wed. July 18 - Wind changed to east. Rain. Dogs have not showed up yet. Too bad we did not load them in the canoe. We could have crossed this morning to next point and probably gone on to Long Point River before the east wind started. Now we can do nothing except wait or go back for the dogs. We are used to the first alternative. Talked about going back with the canoe but wind swung round to South and we couldn't do that, so I guess we shall walk.

Thur. July 19 - Started back alone looking for the dogs at midnight taking some tea and bannock. Saw fresh caribou tracks about sixteen miles down and at once had the explanation of the dogs' absence. About two miles this side of the creek where we had stopped for supper going down two or more caribou had travelled west and met the dogs just as they had crossed the creek. One buck had taken the water while the other turned inland evidently pursued by the dogs as I could see no more tracks or signs of them. I continued west to see if they might have turned back west after giving up the chase. I returned from the foot of the bay west of Sandy Point. No west going fresh track. Back to Sandy Point at 7 a.m. after about 22 miles travel. Made tea and went to sleep. Woke up again at 15 o'clock. and after eating the rest of my bannock, started back at 16 o'clock. The wind calmed down a lot. Cut across some of the points and travelled steady firing revolver shots at intervals. Saw no signs of the dogs and expected to find them at the camp. Back at 21 o'clock. No dogs! Distance travelled about 40 miles in 21 hours. All the results I had out of the trip was a few plants two of which viz., Oxytropis arctobia and Botrychium Lunaria I had not found previously. Rather meagre results for the amount of work involved. About 23 o'clock Rock came in. Very tired and sore-footed. Hope the rest will be in during the night. Wind east.

Fri. July 20 - Fine day. Wind still blowing east, but calmed down in the p.m. West for a few hours then calm again. Too bad the dogs are not here so we could go on! I went about six miles up this bay to the east, forded the creek where we camped and went to the foot of the bay. No fresh tracks of the dogs. So we know at least that they have not passed us. Dragged a rotten fish along to be sure that they would find my trail if they come out of the bush east of here. Back at 18 o'clock. In the evening Olmsted left alone in the small canoe going west again. He will go to the campsite where we fished and if no sign there will cross to the cabin. On my trip today I added Arenaria humifusa and Stel sp.

to my plant list and a specimen of Lobipes lobatus to the bird list. Our last meat is gone. Set a net across the creek before I went to bed and can hear the fish splashing out there now.

Sat. July 21 - Fine day with light west breeze. Got 16 fish out of the net this morning. Did some collecting and wrote down notes. The slough that we are camped on is a narrow piece of water enclosed between two gravel ridges (old beachlines) and only extends for a few hundred yards back from where it extends in a number of small lakes and ponds. The entrance is without a bar and facing east. There is only about two feet of water in the mouth while there is four to five feet further in. It is a good canoe and boat harbour for all winds of course and a fair campsite but for wood. While staying in camp today I had occasion to notice that the tide still is noticeable out here. The water runs into this slough and out about four or five times a day. Except in a place like this and of course in any landlocked harbours or lagoons with no river running into it the tidal in and out rush would hardly be noticeable the rise and fall only being a few inches. I believe the ice is off the lake altogether. We have seen none since the 10th instant and am quite sure there is none in the northern part of the lake. Surprising to see how fast it disappeared after it started to break~~ing~~ up. Shot a muskrat last night and made a specimen of it today. First or second seen on the north shore.

Sun. July 22 - Had only been sleeping a few hours when Wolly's long missed growl woke me up. Sure enough there was Wolly out on the fish pile and Chaplin and Silent too. Shortly afterwards Harding and Junior came up and I had just started the fire when Olmsted came around the point at 4 a.m. He had found three of the dogs about 23 miles down the coast this morning, left the canoe and walked across the bay towards the cabin without seeing the other two. But these in the meantime had arrived at the creek where we camped 26 miles from here. The dogs had evidently come out from the barrens to the north just when he found them. They must have killed something since, they were in good shape and not hungry though pretty sore-footed. Sure was a great relief to see them all back and safe and sound. Olmsted had made quite a remarkable trip. From the creek to the cabin and back in 31 hours. Wind blowing light breeze from East. Wind went down. Broke camp and pulled out rowing at 15 o'clock. Had the dogs in the canoe and kept well out. Long Point at 20 o'clock. Stopped to unload Olmsted's stuff that he is caching here. He intends to go back and fish here in the fall and build a shack. East wind came up before we were done boiling the kettle. Had the boat loaded up but couldn't advance and had to camp.

Mon. July 23 - E. wind calmed down in the p.m. broke camp and were off at 15.40 o'clock. Stopped at small island across the bay looking for birds to band but found none. Shot two geese. Provisions are getting low, last flour baked up. Continued rowing till 19.30 o'clock when east wind came up again. Stopped and had supper on point. Hope wind would go down, but as it kept moving pulled into a bay for shelter and camped. Distance about 14 miles.

Tue. July 24 - Wolf kept howling all night close back of the tent. In the morning wind went down and after a while came up from West. Broke camp and started at 9. Wind increased to nice breeze and we made fairly good time. Pulled up to lee of Caribou Island and took on ballast and went on. Stopped at the cache in Cache Bay. Almost one month has gone since we started West from here. We have still one or two days of grub and of a few things even a few additional rations. Everything was in fine shape. Loaded up what was left here. Went across the isthmus and collected a bunch of specimens that were not out last time. When the wind went down a little in the evening we pulled out again with a head wind four miles across the bay. Had hoped to use the wind from the point on but it calmed all together and we had to stay with the oars. Went behind Fat Island at midnight.

Wed. July 25 - Got a light east wind in the next bay. Camped about five miles beyond Fat Island at 3 a.m. when we got too sleepy and the wind made progress too slow, about 3.30 a.m. Up again at 11 o'clock. Light west air. Broke camp and soon stopped rowing as wind took us along at about two miles an hour. Half way across the bay wind increased to breeze and we made fine time. The water being sheltered by Richardson Island was quite smooth and the wind was not as strong as the other day. At times gave us 6 miles per hour. Stopped at the site of Pt. Confidence a few minutes looking for the "White Arctic Poppy" of Mr. Bell. I have not seen any Papaver as yet and of course also failed to find it here. I Believe Mr. Bell's "poppies" very likely were Parnassia palustris. Also in other places I think Bell is very inaccurate. We got in at 17 o'clock and found everything as we left it. Had cherished a faint hope that Bob might be in with the boat but he wasn't. Hope he is travelling these days. Couldn't get better weather.

Thur. July 26 - Fine, a warm day as yesterday. Same light west breeze came up about 10 o'clock and continued to about sunset. Worked on the collections. Taking out specimens, drying papers, etc., etc. Took observations for latitude and time and confirmed a suspicion I had that we had got one day ahead of time while held up by the ice on the north shore. My latitude at Long Point River already showed this and the slip probably happened at the small creek that I called Mosquito Creek where we first fished. Collected plants in the vicinity. Fine day, hot and distant thunder as usual. No sign of the boat. I had wished to make a trip some distance up into the Dease valley and as the boat may not be in for some time yet, I packed up a few days grub, tarpaulin, mosquito bar, etc., etc., and left alone with three dogs packing at 23 o'clock. Followed the trail from Arden's and had excellent going. The trail must have seen considerable travelling also in the summer for as far as the timber is fairly continuous. It is well-worn and easy to follow. Earlier in the season it is wet and impassable but now all the sloughy and swampy ground is fairly dry and it was excellent. Crossing the low sandy hills a few miles up I saw a good example of a recuperating Cladonia alpestris field. This country must have been a favourite fall and winter place for caribou before it was regularly inhabited - about twenty years ago and the best Cladonia fields must then have been rather closely cropped. Now things are coming back fine. Some complications arise here from the fact that the ground squirrel uses Cladonia alpestris to some extent. How much I cannot say but have noticed that even in the summer they eat some. ~~and probably lay up stock for the winter.~~ Found Lycop. complanatum not seen before and on the first barrens Tof. coccinea, distance about 16 miles.

Fri. July 27 - Crossed Gashe Creek and camped on a little hill at 4 a.m. Clouding up and rained some all morning and day. Sultry with thunder and occasional showers. Started at 16.30 going over Gashe Hill no sign of caribou. Travelled about N.N.E. to Observation Hill when I had a good view of the valley. From there I cut across to Dease River which I followed to the junction with Gashe Creek. At this place there is some very fine spruce very tall and straight. ~~About 100 feet.~~ Dease River is really much smaller than I thought. Hardly water enough for a small empty canoe downstream. I think Driftwood River carried more than three times the amount of water and also Long Point River is much bigger. Followed Gashe Creek back to camp about midnight. Flies bad all day. No sign of game whatever. Distance about 20 miles.

Sat. July 28 - Collected on the creek this afternoon and tried to fish for bluefish but got none though there were many in the creek (my hook too large). Strong East wind all morning. Broke camp at 20 o'clock and started back towards Dease Bay.

Sun. July 29 - Arrived at the houses soon after midnight and found Bob in with

Boland's schooner "Star". What a relief. The replacement of Olmsted's stuff have been weighing on my mind even since we got here. Bob had a fine trip from Fort Franklin and only took three days across. With him he has a young fellow by name Osgood from Dept. of Mines. He is anthropologist he says and in here to study the B. Indians. He was anxious to see Bear Lake and Bob offered him to go on with us taking his turn on the boat and doing what work arose during the trip. Bob reports that the Distributor arrived at Norman on July 1st and had returned from Aklavik on the 13th. The boat brought the "flu" in and the Indians are dying like flies along the river. At Norman 25 already some places larger numbers. One sometimes wonders if the medical service of this country is not neglected and if a few more doctors instead of R.C.M.P.'s wouldn't prove more beneficial to the country. I think it a wonder that Bob got up so early in spite of the sickness. Boland was very sick for some time too. I had a good mail and stayed up reading my mail all night. Unloaded the replacement stuff to Olmsted. Bob had done very well indeed and managed to get everything so that part is o.k. In lieu of wages Olmsted received the six of my dogs (all except Junior) and toboggan, harness, etc., besides $100. in merchandise and cash. Bob started shifting the rest of the stuff around the boat and bringing same in shipshape.

Mon. July 30 - We took aboard a bunch of stuff belonging to Mr. Boland - the owner of the boat. We had promised, if possible, to take as much over as we had room for. Accordingly we took as much as we could conveniently carry. The dogs evidently had a hunch that something was going on and when Olmsted tied them up they were most miserable and howled every time I went down to the boat. We pulled out about midnight and could for a long time hear the dogs howling out their disapproval of my sneaking away. Sorry too to leave the best dogs I ever drove or ever will drive. Olmsted has been trying hard to get Junior too but I made up my mind a long time ago that he was to stay with me.

Tue. July 31 - We only went down the east end of narrows and anchored up here for the night. I had our triangulation station here that I did not have time to occupy this spring and did that in the morning as soon as the sun rose. Also did some collecting. Left at 10.45. Had a fair wind and made Narqa Island shortly after noon. Anchored in the west harbour and spent afternoon ashore collecting.

AUGUST

Wed. Aug. 1 - Fresh breeze from S.E. Left at 7.30 for Caribou Point where we want to pick up a better sail and mast off that wrecked schooner there. Wind hauled round more as we approached the point and also increased in velocity. Tried to go round but found wind too strong and as we did not Knew the anchorage was down at the wreck we turned back and anchored in small bay just north of the point at 12.30. One of the valves has worked loose and had to be re-adjusted etc. Went ashore in p.m. I walked across the point to bay on south side looking for caribou. Lots of fresh tracks but saw none. Collected some plants and a young Harelda hyemalis in down. Back at 21 o'c. Distance about 15 miles. Bob collected in the vicinity of the point. Made a birdskin etc. Wind decreased some at night. Moved the boat out to deeper water.

Thur. Aug. 2 - Same as yesterday but wind not quite as strong. Left harbour and went around the point and put up at the stranded schooner on a small island. Worked all afternoon and evening until dark taking mast, sail, ropes, etc., also took up engine and transferred the small capstan to our boat. Took observations for latitude.

Fri. Aug. 3 - Blowing a stiff wind from E. out of McTavish Bay. The anchor dragged some during night but wind went down a bit in the morning so we moved in again alongside of the wreck. Took the motor, anchor and chain aboard for ballast. Put in a couple of deckglasses for light and set up a small stove that we brought in

for winter use but had not had occasion to use yet. Got things fairly well straightened up and hope for fair wind tomorrow. Wind increased during night and we had to move the boat out some.

Sat. Aug. 4 - Still blowing some but not more than we could travel. Left about noon. Had some trouble with the motor and stopped a couple of hours off a small island. Stopped again at small creek and went ashore. Numerous fresh caribou tracks and some fresh bear tracks. There is a peculiar looking spring here in the crater like top of a sand cone. Very little water comes out at this time of the year, but I believe considerable volume of water comes out earlier. The spring is "boiling" i.e., gas bubbles up in the well and the Indians claim that at times black sooty stuff comes up with the water. (Bob informed from Chief (Jimmy Soldat). Water did not taste salty but undoubtedly contains some mineral in solution (Magnesium sulph. or Alum ?) as the vegetation is much affected and on the low half barren plain the sand is white with incrustation. Flora all halsphytes: Plantago maritima, Carex incurva, Sagina nodosa, Pleurogyne rotatum, Aster sibiricum, Taraxacum sp., Puccinellia sp. Also the caribou tracks indicated that this spring was much resorted to by these salt hungry animals. Collected a number of birds and plants. The barrens extend about fifty miles south of Caribou Point although the timber as a rule reaches the lake at the foot of the bays the maximum width of the barrens thus at the points being from one to seven miles or less. Larix seen for first time since we left Keith Bay this winter. Only few trees seen.

Sun. Aug. 5 - Fair, light East breeze. Travelled into the bay following this shore. Stopped in afternoon at mouth of small creek and went ashore for a few hours. Travelled until midnight and anchored in well-protected bay or harbour. Made five birdskins from the collection yesterday.

Mon. Aug. 6 - Fair, with showers and cloud~~y~~s in p.m. Went with the small canoe to the foot of the bay. Found here a small river that I ascended for about three-quarters of a mile. It drained a rather complicated system of lakes the largest running about North East to South West for about eight to ten miles. Went up about three or four miles and landed on the east side and climbed a high hill of laurentian rocks (quartz ?). The PreCambrian rocks crop~~s~~ out under the limestone and although most of the hills are capped by columnar (dolomite ?) the lowland and some of the hills are now PreCambrian. I have only seen granite in drift and the rock is everywhere (quartzite)(with veins of quartz.) As might be expected the change of geological formation also affects the flora considerably and I found a number of species that I have not met with before on Bear Lake. Several were indeed even new to the Mackenzie District. Drosera longifolia, Pinguicula villosa, Utricularia vulgaris. Took a number of photos of raised shore lines here found as high as four to five hundred feet above lake level. Also curious lichen formation. Took series of bearings. Back in the evening. Bob had in the meantime been out to the point and examined the limestone hill and later botanized on the boundary between limestone and PreCambrian Tried to get observation for latitude but sun was obscured when in the meridian.

Tue. Aug. 7 - Fair - like yesterday. Started at 10.30. Proceeded East. Stopped and took a sounding off larger river - 24 fathoms. Stopped at small river or creek in the afternoon. There is a cabin and another log building about half a mile up the river at the first rapid. I think Boland wintered here some years ago. Went ashore and did some collecting but did not see much of interest so we left again after a few hours ashore. The coast is well protected here by numerous islands and strikes about 5° W. of N. (mag) and is fairly straight i.e. without any large bays. Passed Hornby's old cabin but did not stop but continued to the foot of the bay where we anchored just before dark. The last three or four miles is a lake-like pocket separated from the main bay and only connected by a quite narrow opening of a river-like channel. Past this narrow the bay opens up into a w-formed bay. The entrance is so narrow that the tide runs about one or tw

knots at times.

Wed. Aug. 8 - Went ashore in the morning. Saw a flock of geese in a small creek but did not see them till too late and did not get any. Came back at noon for observation for latitude but a shower came and obscured the sun a little before transit so I did not get it very well and my latitude is probably several minutes out. I shot a couple of small birds - one a Bombycilla that I have not seen since this spring, the other a Sayornis sayus, that I have not seen before. Good size Betula pap. here and spruce is considerably taller than I have seen at Dease Bay. The formation is somewhat mixed. Lowest is a conglomerate of quartz overlaid by greenstone of same formation as we found in the highland south of Dismal Lake especially near Ukivik and that probably extends through Dismal Lakes and the "Copper Mountains". Bob had several interesting finds from a "Hochmoor" behind the coast hills. We were both back about p.m. and soon left. Followed the coast shore and stopped about 20 o'clock in small harbour. Osgood and I climbed a hill to the north of the harbour 850 feet. Took bearings and sketch of the whole bay. Splendid view from the top. Bob in the meantime explored the shore to the south from canoe. Here the greenstones reach from the lake right to the top.

Thur. Aug. 9 - Fine and calm. Left after breakfast and stopped about ten miles further down. Took observation for latitude and skinned the birds, etc., etc. Portaged the small canoe into a lake back of the anchorage and crossed a lake and from there climbed a mountain. - . Many interesting things on the south slope. Bob went back same way while I went around the west arm of the lake out to the boat. The valleys are heavily timbered with white spruce. Canoe birch up to six inches abound on the slopes with small aspen and balsam and poplar. All the ravines abound in raspberries and red currants and blueberries. Only one never gets a chance to sit down and eat any number on account of the flies that are pretty bad again.

Fri. Aug. 10 - Gray and cloudy. Blowing hard from E. in the afternoon. Left late about noon and stopped at a small "glacier". A good size spring that evidently emerges in the bottom of a small pond. Vast masses of ice must have been accumulated here during the winter as still a considerable thickness of ice covered the pond and outlet. This mass of ice was visible from across the bay. The water had a peculiar, rather pleasant taste and deposits of a white mineral, probably mostly gypsum were seen where the ice had disappeared. Also the ice was covered with the white incrustations on top. Took specimens of the residue and of some minerals in the vicinity, also collected a few plants. The spring is in a small bay about fifteen feet above the lake. Crossed the mouths of two fjords that we had seen yesterday from the hills and that I think goes at least twenty to twenty-five miles inland. The strike of the fjords is N - S. mag. and the entire land is cut up in tabular block island by another strike about 75° on the direction of the fjords. Entered a third fjord and stopped for the night in shelter behind island. Started raining.

Sat. Aug. 11 - Rained steady all night. The deck is leaking badly. Cleared up about noon. Tried to get latitude but sun was not out till about ten min. past the meridian. Climbed the island which was found to be granite, the first we have seen. Several very interesting specimens e.g., Cryptogramma, Limosella, Agrostis borealis, Corydalis. Went behind the island and followed a winding channel well-protected from the main lake and very deep. A few soundings gave 70-61 and 75 fathoms. Stopped before dark.

Sun. Aug. 12 - Bob and I climbed a high hill to the north of our anchorage. We found that we were anchored on the north end of what looked like a small island, evidently in the south side of the bay or fjord complex that we have been in for the last few days. Beautiful sounds and rocky precipitous islands. Deep blue water and good size timber on all suitable places. If the surface of the island

and the almost total absence of little streams not indicated a very dry climate the resemblance of the coast of B.C. and S.E. Alaska would be striking. After returning to the boat a couple of hours were spent drying felt paper while I was waiting to get a latitude (66° 08' 25"). Left at 13 o'clock but got foggy as soon as we got well out and had to stop two hours on account of the fog. While waiting made a trip up to some lakes where we found a few interesting things e.g., Spiranthes, Orchis, etc. Travelled again for 1½ hours and got out of the "greenstone" into a gneissgranite archipelago somewhat lower than the former. Fog came up again and we anchored in a protected bay at 18.30 o'clock.

Mon. Aug. 13 - Cloudy in the morning and strong wind from West. It must have been blowing for some time in the other end of the lake as quite a heavy swell started before the wind and raised out of proportion to the force of the wind. I tried to go out and around the point with the small canoe but had to return as the shore was much too rough to make a landing. After returning to the boat went overland and returned to boat at 17.30. Bob in the meantime had explored a string of lakes from the harbour to the N.E. This is the first place where we have stopped 24 hours. We are now well into the granite and although few boulders of limestone and greenstone are still seen the rocks are all granite (hornblende) etc. Naturally with the changes in the formation also the character of the coastline changes and the general N.E. strike of the fjords and valleys is not so much in evidence any more. It is almost dark at midnight and nearly all the stars are out. Auroras tonight.

Tue. Aug. 14 - Fine and clear day. Slight breeze from West. Started at 10.15. Followed an open coast till we at noon were abreast of what looked like a sound going about S.E. Stopped under high hill at north side of entrance and climbed it to see what was at the end of it. After a fairly narrow strait of a couple of miles the sound opened up to a lake-like body of water dotted by numerous rocky islands. No doubt this was Conjuror Bay. Took some bearings and photos and drew a sketch of the sound. Descended the hill making botanical collections and also collecting specimens of rock. Started again at 14 o'clock, shortly afterwards saw strait or fjord opening to N.E. followed it N. 15 E. (mag) later N 45 E and back to N 25 E, till about 16 o'clock it turned sharply E and behind a small low island covered with birch a small creek or river entered. Continued about one mile to the foot of the fjord. Returned at 16.45 from here without seeing any river. Anchored behind island. Went ashore and found the "river" to be a very small sluggish stream draining a small lake. Found several interesting aquatic plants in the slough. Climbed a high hill to the south and had a good view of the land behind. A few lakes, one quite large about N.E. drained by a good sized turbulent stream that must enter our fjord at the foot of the bay though we missed it somehow. Descended and were back on the boat at 21 o'clock. Water in the fjord like the water out in the main lake 52°F.

Wed. Aug. 15 - Fair but cloudy most of the day. Breeze from West. Went with Bob to the foot of the fjord and found the river alright. One continuous rapid all the way up to first lake. I had brought the small canoe along and after looking around near the foot of the rapid I returned towards the boat. Found an old Indian tepee at the foot of the rapid, also a winter portage trail and a doubtful summer trail. The latter I may be mistaken about as I could only follow it for about a quarter of a mile. Bob went up to the lake following the river. Returning I came across a bunch of ducks and hunted them for a couple of hours and killed eight. We have had no fresh meat since the north shore and our supply of canned stuff is running low. Saved three perfect birds for specimens. In the afternoon fished water plants in small slough back of the boat. Bob returned and walked up to a small lake - the source of the small creek. Many new types from this place. The backland is a complicated system of granite hills and ridges none of which I believe exceeds 1000 feet and most of them are considerably lower. The lowland is all timbered but except in particularly favoured places I have seen no spruce and forest better than the usual and certainly none that would be of any economical

value except for pulpwood perhaps. Vide, J.M. Bell p. 180, l.c.) Old caribou horns are found quite commonly especially on the more or less barren hill tops but no fresh signs of anything except moose and bear. I doubt if this country is frequented by any barrenland caribou at all at the present time. In the evening it started to rain heavily and rained steady all night. The deck of the boat is very leaky and we had to cover everything up and sleep under tarpaulins ourselves as well.

Thur. Aug. 16 - In the morning it blew up and before noon it was blowing a gale from N.W. The big canoe broke its line and went adrift and stranded about a mile up the bay. The anchor also started to drag though the bottom is clay. Bob and I went in and got the canoe and pulled up the anchor heading for the foot of the bay where we knew there was better shelter. On the way in the small canoe capsized and the line consequently broke. Fortunatly there was nothing in it. Pulled up against the shore in shelter behind a high rock. Osgood and I went back to salvage the canoe and brought it back. Rain ceased in afternoon as the wind increased. Bob collected and I made bird skins.

Fri. Aug. 17 - Snowing and raining at intervals all day. Wind very strong in the afternoon. Everything is wet and miserable. Found that one corner of my trunk from touching the side of the boat had got full of water and my sliderule thus got thoroughly soaked and ruined. A box with films also was in the water but thanks to the cartridges of which I still have some left - the films were o.k. Just before dark something frightened the dogs. They were ashore and took refuge in one of the canoes. We searched the woods in both directions but found nothing. Junior could smell tracks of something - I guess a bear. Snow and sleet at dark. Tp. plus 3° C.

Sat. Aug. 18 - Windy. Clear part of afternoon. Cloudy at night. Rain and snow again at dark. Walked up the river to the first lake and took some photos of the very picturesque rapids and scenery along river. Back again at 18 o'clock. Heard two wolves howl quite near several times. They were evidently circling around us. I believe it was these wolves that scared the dogs yesterday. This morning the dogs were growling again at something. Saw first tree squirrel. Have heard several before in McTavish Bay but seen none. There are none in Dease Bay though there used to be some as I found old nests and caches occasionally.

Sun. Aug. 19 - Clear but wind still blowing from same corner. Took observations for latitude 65° 50' and then started out of the fjord. Went back of Richardson Island where there is a good sized bay with countless small and large islands. Stopped at small island at 15.30 and left again at 17 o'clock after trip to top of island, where I took a set of bearings and made a sketch etc. Anchored for the night at 18 o'clock at the entrance to the south narrows. Went ashore and with Bob climbed high hill south of the outlet of the narrows. Magnificent view from the top that is one of the highest points in the whole bay. Could see Keith Point, Caribou Poin and the whole north shore of McTavish Bay, most of the bay behind (Conjuror Bay) and the first strings of lakes on Camsell River portage and to the left what I expect to be Hottah Lake. We couldn't see the outlet of Camsell River. Built a cairn and returned. Dark overtook us before we got back to the boat at 23.15. Distance about 12 miles going and coming. First Larix seen here.

Mon. Aug. 20 - Fine early in the morning but clouded up and started to rain soon after noon. We had figured on setting up a tent and get some of our plants dried. The boat is too damp for drying and the plants take too long to dry. Bob went into the fjord back of here with the large canoe and the kicker while Osgood and I went out to some small islands where we measured out a base line to get the height of the hill we had climbed yesterday. Dried some plants over the stove and took out and laid in folders the collection from Black Rock Bay. Bob back after a wet and resultless trip. Thick fog all afternoon and night and heavy rain.

Tue. Aug. 21 - Stiff breeze from N.W. but clear nearly till 18 o'clock in the afternoon. We started from our harbour but found the lake too rough outside the narrows and laid up at a beautiful little spot at the narrowest place where the narrows is only about fifty yards wide. An old beach consisting of a bowlder ridge across the valley has but in recent time been cut through and the two narrow fjords connected into a sound. A surprising current runs through apparently changing four to five times in 24 hours. At times in the afternoon while I was watching the current was running over two [illegible], I am sure. At once after landing we set up a tent and I started to go through the six feet of fresh or dry plants in the presses. It took me seven hours to go through them. In the meantime blotters were dried etc., etc., so that we now have a fresh supply of dry blotters. Osgood helped me drying blotters and also collected some spruce seeds. Bob explored the island back of the camp all afternoon and in the evening made another trip across the sound to the mainland side. We had the hatches off and the boat dried out some inside. Also bedding etc was taken ashore for a much needed drying out. Clouded up at night.

Wed. Aug. 22 - Foggy at six when I got up so I went to bed again till 8 when the fog had lifted some. Broke camp and started at 9.30. Fresh breeze out in the bay from N.W. Stopped for lunch in small sheltered bay for about an hour. Saw several flocks of Branta canadensis, but they got on the wing before we had landed so we got none. The coast is rather shallow i.e., a "continental shelf" extends from a few to five or eight miles out averaging from about five to eight fathoms, and from there there is a sudden drop on to deep blue water while the water on the shelf is milky blue, much lighter coloured than on the deep water. There is a number of bars and islands. Several fairly good harbours - though of course nothing like McTavish Bay. The geological formation changed as soon as we got out of the narrows to limestone of a similar type as Dease Bay or the north shore of Smith Bay. Consequently the character of the country is much the same only most of the shore is ~~well~~ wooded much better than one would gather from Edward Preble (Athabasca and Mackenzie River 1.C.) After we started turning towards S.W. very gradually following the coast and going inside three or four small low bowlder islands we saw several deep sinuous bays. One we mistook for the narrow sound behind the first larger island west of Pt. Leith (Boland's sketch map). The entrance was very narrow and shallow. We found the bay closed about two miles in and returned touching the bottom in one or two places re-crossing the bar. Finally found the right sound and anchored behind the island. This sound is quite shallow and full of bars but there is at least one or two eight to ten foot channels. Anchored at 18 o'clock. After supper Bob and I went ashore and soon found several interesting things.

Thur. Aug. 23 - Fine, calm day with sunshine. The island is not very large. Probably three or four miles long and lenticular in shape. Low and swampy with dry bowlder ridges. Most of the low island on this coast and on the north shore and several other places as well are all built up from the lake bottom and I believe the process is still going on from year to year. The building agent is not corrals but the ice pressure. The process is undoubtedly exceedingly slow but every winter a layer or a row of new bowlders are showed up on already existing reefs or shores. The island is well timbered and very uninteresting except for the flora (I forgot the bulk of the bowlders are of quartzite and other silicious rock and although the bedrock undoubtedly is limestone on the closest mainland to the east, surprising few limestone bowlders were seen. Explored the island from 8 a.m. to 15 o'clock and then crossed with the canoe to the mainland and went about six miles up in a good sized bay that here cuts about ten miles East. Swampy, densely timbered country. Tammarack quite abundant and trees eight to ten inches thick seen.. The most interesting things today are: Tofieldia glutinosa, Viola species, Selaginella selanginoides, Habenaria hyperbore Pirola chlorantha, P. minor, Utricularia intermedia, U. minor, Pedicularis [illegible] flava or Oederi etc.

Shot a ptarmigan and two juvenile seagulls (Larus argentatus). Back to the boat at 19.30 o'clock. Moved the boat out to a deeper anchorage and made ready for an early start for Big Point. Just after I went to bed I heard a bump and splash and on coming on deck saw Scotty - one of the dogs - swimming around the boat. Osgood put them ashore for the night, but when we moved the boat out the dog got uneasy and although the boat would hardly be visible from shore in the dark, he started to swim for the boat ~~[illegible]~~ sooner than sleep ashore. I went in to fetch Junior and found him sitting on the sand very miserable and was hardly landed before he was in the canoe. Took latitude at noon.

Fri. Aug. 24 - We got up at 4 a.m. and were off at 5.45. Slight air from N.W. but calm later. Found a shoal about six miles off the coast with only about three feet of water. Stopped a couple of times because of water in the carbureter and also to take soundings. 34 fathoms was deepest found and s submerged ridge thus exists across the lake. Made good time and anchored at Big Point at 13.30.

Bob started out for the highest point on the peninsula which is probably six to ten miles back from the coast. The weather was perfect but as the anchorage was not very good, I did not want to leave the boat too long on this exposed place. I walked a few miles up the shore and returned to the boat in the evening.

According to Hanbury the south side of Big Point or Gros Cap was burned off in 1902.

Judging from old stumps and charred logs the country had previously carried the ordinary growth of stunted or rather scraggy Canada spruce. Now the country had an open and park-like appearance. Thickets of willows, alder and birch alternated with beautiful verdant meadows, here and there with a solitary well-shaped spruce and tamarack 15 to 20 feet high.

In this case the effect of the burn, on this well-drained, fertile area had been a most beneficial one, otherwise, in the muskeg country, a forest fire usually leaves the soil almost sterile and the country probably returns to the original muskeg state after a certain time.

Bob returned late in the evening. He had reached the top of the hill nearly 1500 feet above the lake. Above the timber line which was found about 800 feet up he had found a series of terraces covered with alpine meadows with a flora distinctly different from anything we had seen before.

I took specimens out of the presses and made some bird skins in the evening.

Sat. Aug. 25 - Fine and wonderful weather. The lake is calm like a mill pond even ~~more~~ smoother than yesterday. Left at 10.15 o'clock following the shore into Deerpass Bay. Stopped on the east side a little beyond the cache about halfway on the foot of the bay amd made a trip inland.

Heavily timbered and swampy terraces with an almost impenetrable undergrowth of Salix, Alnus and Betula. Numerous signs of Indians - some very old - much pre-Franklin I believe.

Returned to the boat after three hours, very tiresome travelling through the bush. We crossed in the evening to the west side of the bay. Two soundings gave 10-18 fathoms, water - the latter midways. Found an indian camp First Indian I have seen since April 1st. One old woman (who lost her husband during the flu this spring) accompanied by three boys and three little children.

SEPTEMBER

Sat. Sept. 1 - Fine and glorious day. Started at 8 and stopped shortly after when we saw Oulettes camp. We had a bill of kennel charges to pay him. He looked after Bob's dogs while Bob went down to meet the "Distributor" this spring. He was the only man staying at the lake and charges $15.00 per dog per month. Rather an exorbitant price - but there was no choice. Made a stop at Porcupine River and later at Big Stick River and made some collecting. Camped just above the rapid at 18.15 o'clock. Smoke from some large fire is coming up from S.E. and the visibility was very low this evening.

Sun. Sept. 2 - Day started out fine. Beautiful and extraordinarily warm - the warmest I believe since early in the summer. After breakfast we started down overland following a trail down the rapid to get a look and to take some pictures. About two miles down the trail runs out to the point in the middle of the rapid and one has a wonderful view of the whole rapid and Mt. Charles. Returning to the camp we loaded up and started down at 11.15 and were through in about fifty minutes. Stopped at the foot of Mt. Charles and had lunch before ascending the Mountain. Just before we left Boland came with his boat and our baggage and stopped for lunch too. He made this place from the Fishery in nearly four hours. It took us 2 hours to reach the summit ~~top~~. In the meantime it had clouded up and I had carried my large camera up for nothing. Although the visibility was poor we had a wonderful View the whole country. Couldn't see Bear Lake although we could see the north shore as far as Russel Bay and to the west we could see the mountains west of Mackenzie.

The smoke we saw yesterday comes from what looks like a large forest fire in the mountains west of Mackenzie and about 25 miles up. Mt Charles is 1420 feet by aneroid and has evidently been glaciated as we found erratics of quartzite and granite right to the top. On the side facing the river there is a series of crater-like holes or depressions. The side towards the river stands up with a steep wall over 75 feet in place and there is a gradual slope towards the mountains. None of these holes have any outlet but as there is no water in the bottom I suppose there must be a subterranean passage. The "craters" have probably been formed either by an enormous slide or else when the folding of the ridge took place. Probably the latter as the strata are little disturbed and almost vertical. Returned to the canoe, it started raining. We loaded up and went through the rapids ~~down below the rocks~~ and camped on the first level ground at dark.

Mon. Sept. 3 - It rained heavily all night but cleared up towards morning when a N.W. storm started. Broke camp and started at 8 a.m. Got the motor running about one mile and then refused to start up again. Magneto damp likely. Had to paddle hard to make headway against the wind. Arrived at Norman at 18 o'clock after about forty miles paddling. Unloaded below the H.B.C. where we were offered an empty building where we established ourselves. Straightened up things and settled our business with Mr. Boland. The surplus we turned over to him covers a large part of the bill for freight, etc.

Tue. Sept. 4 - Two trappers came in from Simpson reporting that the steamboat had not left Smith on August 28th. Called at the R.C.M.P. and R.C. Mission. Corporal Baker told me that the Police on the second boat had received the canoe and one box of hardware. These things were ordered by wire in February. As it turned out we got along without, but if for instance Olmsted had insisted on replacement for this canoe I should have been in a bad way as a canoe of this type cannot be bought here. Medium-size canoes are not in demand here where there is no rats. I don't know whose fault it is but did not think I could sell the stuff so I shall refuse to receive it and asked the Police to store it till instructions from the H.B.C.

Wed. Sept. 5 - Went down to the N.T.C. where we have a large account for stuff bought this spring when we went up to the lake. The H.B.C. did not have or

Father did not want to sell as they want to save their stuff for the spring hunt. So we were compelled to buy from the N.T.C. although their prices are much higher even than the H.B.C. We had a large credit transferred from Aklavik for surplus stuff we sold to the N.T.C. there and that covers most off the bill here. Hope the Distributor returns from here. We have to move out of our house when the boat arrives as an employee of the H.B.C. moves in here. The R.C.M.P. undoubtedly would house us, but as the Corporal is married and they have a couple of prisoners I don't like to draw on their hospitality. Packed up and labelled stuff we are shipping out. To the Museum we are shipping ten boxes of specimens.

Thur. Sept. 6 - Still packing and settling accounts when the steamboat turned the point at 5 in the afternoon. Moved out of the house and finished our packing. Boat leaves for below at daylight. She is going through to Aklavik and so is the "Liard River" which is due in a week or so. If we had not sold or packed all our equipment we could have made one or two trips from here, but with the equipment we have left without canoes etc., we cannot do much. I had always wanted to get a few days at Good Hope so we boarded the boat.

Fri. Sept. 7 - Boat left at daylight. Rain most of the day. Water quite low in the Sans Sault and we were stuck on a bar in the middle of the whirlpool for nearly an hour but finally got off without any damage. Arrived at Good Hope at dark and were heartily welcomed by Constable Cummings of the R.C.M.P.

Sat. Sept. 8 - In the evening two gas boats arrived from above run by Mr. Dodman of the H.B.C. at Red River. One was for the R.C.M.P. at this Detachment the other was going on to Red River. Coming through the Rampart Rapid they had lost control of the boats and in an attempt to reach the channel they drifted sidewise over the east side of the rapid where there is a distinct drop of several feet. A kettle of boiling water was upset over the engineer's right foot scalding it rather badly. The two boats were lashed together side to side and suffered a few bumps but were not otherwise injured.

Sun. Sept. 9 - Rain.

Mon. Sept. 10 - Went with Mr. Furlong down to the Rabbitskin River where Furlong has a homestead. While he dug up his potatoes etc. I went up the Rabbitskin River a couple of miles, shot a duck and a small bird that I have not seen before. Furlong broke this garden this spring and is having wonderful results. The potatoes are of the old famous Good Hope stock. For some reason they keep better than any other potatoes I have seen and the skin even in the spring is quite thin and smooth. Another peculiar thing Mr. Furlong brought to my attention is, that the seed potatoes apparently remains quite unchanged and can only be told from the new crop by a slightly thickened skin. Besides potatoes he had some wonderful cabbage, good size carrots, lettuce, radish, beets, spinach, etc. Took a few photographs. Walked back to Good Hope through the woods. Nearly all the birds have left. Besides the stationary jay, woodpeckers and ravens and a hawk I only saw two species of sparrows.

Tue. Sept. 11 - Collected a few smaller birds and one owl. Furlong is very much interested in natural history and I have hopes that he will do some collecting here in the future. He is an old timer in the country and has a wonderful knowledg of the fauna. We have had several good talks. I showed him how to make bird skins and am leaving my collecting outfit here, also the handbooks I have brought down here.

Wed. Sept. 12 - Rain and wind.

Thur. Sept. 13 - Rain and Wind.

Fri. Sept. 14 - Raining all day. Distributor arrived at 6 p.m. and left an hour later. We said farewell to our hospitable host the Police and embarked with our baggage. The boat laid up below the rapid for the night.

Sat. Sept. 15 - We started at daylight but found the boat couldn't make the rapid. After a couple of hours they pulled in to the bank and left the barge and tried with the boat alone. Same result. In the evening a steel cable 2800 feet long was brought up a distance above the rapid. Tomorrow the plans are to try to let the boat drag the cable out to the channel which is about 1000 feet out from the bank.

Sun. Sept. 16 - At first attempt the cable caught on a rock and broke. A boat was lined up to the upper end of the cable to try to bring it out to the channel and drift down shore. A light line with a buoy was attached to the end of the steel cable. None of the crew knew how to use an oar. It was decided that the boat crew should be volunteers. Bob and I joined and with two deck hands and the two mates started out. The cable weighed about two tons and was very hard to handle especially after we got out in the swift water. Things were not very well arranged. On account of the weight the cable had to be in the back of the boat which in case a kink caught in the boat would most likely cause the boat to upset. Also we had not power enough on the oars to tow the heavy cable and keep the boat up. However, we managed to get out to the channel and was swept down with a tremendous speed. Had the cable caught we certainly would have been in a bad way. In the meantime the Distributor was to be below the channel and pick up the float. When we came out through the chute however we saw the old steamboat stuck on the bar below the eddy. Worked all day with engine and warp anchors without results. Cables kept breaking and the boat working further and further up the bar.

Mon. Sept. 17 - Boat got off after two hours and pulled in to the bank again. A second time the boat went up to the chute but could not pick up the end of the cable. Evidently the buoy wasn't big enough. Dredged with hooks and anchors for two hours without result. Again the boat pulled to the bank and the lifeboat was lined up. We should try to follow the cable out and attach a heavy 800 ft rope to the end of the steel cable as we drifted through the rapid. Then we should hang on to the rope till the steamboat picked us up and the rope. Started out with same boat crew. Found the cable caught under a rock or in a crevice just above the rapid in the swift water. Tried to work it loose for about an hour but had to give up. We were too far down to be able to go back so we had to go through a second time. Cable is probably lost. Boat went back to Good Hope to get a gasboat. The mate was to go up to Norman where it is hoped that we can get a cable at the oil well. The "Liard" should have been down by this time. I'm afraid we are out of luck if the "Liard" is stuck above. She left Smith on the 10th. There are 62 persons on the Distributor and the Liard has accommodation for 6. We got an outboard motor and returned to the rapid.

Tue. Sept. 18 - The two mates started at 8 a.m. after a small boat was lined up. Bob was appointed "mate" in the absence of the regular one and was leading operations for salvaging the cable. He rigged up tackles etc and with the combined forces of crew and passengers salvaged 2000 feet of the heavy cable. At the first splice the cable caught on a rock and the splice pulled out the remainder-800 feet lighter cable thus lost.

Wed. Sept. 19 - Waiting for the "Liard River". Collected seeds and took a series of photographs.

Thur. Sept. 20 - The M.S. Liard River arrived in the evening. The mate met it just above Sans Sault River and the boat returned up to the Imperial Oil Well here they found 2000 feet of old cable that they took back.

Fri. Sept. 21 - The Liard laid out the 4000 feet of cable to just above the chute and dropped a lifeboat down the channel with a rope. In the meantime the steamboat was out there and after many clumsy attempts picked up the line and started winching in on the cable. Everything went fine and the boat was almost through when the engines stopped. I was ashore taking photos and expected the cable to break any time. I learned later that the flues were stopped (caused by sand from the driftwood we have been burning the last few days) and accordingly the steam went down from 200 to 50 lbs. pressure. It took them about 1½ hours to fix it up. Fortunately the cable held and the boat continued upstream inch by inch and finally was up and safe. It was quite late then and a council was held between the various pilots and experts as to whether the barge could be taken up or not. The concensus of opinion was that although it could be done it would greatly hazard the safety of the steamboat and the safe passage of the passengers and the fur. The Liard leaving her barge went down and took the little freight up through the rapid that we had left behind in the barge. First, of course, they had to relay the cable.

Sat. Sept. 22 - Finally we could continue our much delayed journey up river. It was finally decided to leave the barge and the Liard after returning from Aklavik was to take it down to the Rabbitskin River where it is to be frozen in. Stopped at first woodpile below Sans Sault with only one stick wood left and took 3 cords. Above the Sans Sault that did not cause any trouble we stopped again and took on 14 cords and later again took on some more.

Sun. Sept. 23 - Blowing hard from S. Sand and dust storm. Stopped at Bluefish Creek at dark and tied up for the night.

Mon. Sept. 24 - Arrived at Norman at 9 a.m. and left again at 11 after taking aboard our freight and some passengers. Still blowing very hard.

Tue. Sept. 25 - Arrived at Wrigley at 9 p.m. Got a steer here from R.C. Mission. We left at midnight.

Wed. Sept. 26 - Rain and fog. Smoke. It must be a tremendous fire in the mountains. Arrived at Simpson at 9 p.m. Wireless station is being moved and cannot send. Went up to see if any messages were there for me. Heard that a government airoplane had been lost on the Peace River a few days ago. The planes belonging to the N.A.M.E. Aireal Mining and Exploration Co. left about ten days ago. Met Dr. Truesdale.

Thur. Sept. 27 - We pulled out at 5.30 and stopped for the night at the end of Mills Lake. Rain and fog.

Fri. Sept. 28 - Arrived at Providence at 2 p.m. and left again a couple of hours later. Pulled up for the night at Wrigley Harbour in thick fog.

Sat. Sept. 29 - Started early for Hay River got a fresh breeze out on the lake. The water soon got rough and the old boat began to work in a most unpleasant way. The sea was on our beam which is the worst place it can hit us so we had to tack. First the top of the boat began to work sideways at the upper deck 6 to 8 inches with the rolling of the boat. Worse, however, was that the boat also warped and worked lengthwise in a most sickening way. When one sat in front of the smoking room and looked down through the dining room the floor, i.e., second deck moved so much that at times a man sitting in the far end of the dining room was only visible from the knees up. I can better understand now the old Mackenzie River yarn about the old "Trader" that got her propeller shaft bent going over the Rampart Falls! and had to put in two universal joints. The chief engineer claimed that the lower deck on this crossing bent over 1½ feet and he was consequently much worried about his steampipe that runs the whole length of the

oat. We got in alright however and were in shelter at Hay River at 10.30 a.m.

un. Sept. 30 - Stormbound at Hay River.

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on. Oct. 1 - Stormbound at Hay river. Trip around the post. Saw the Anglican ission boarding school.

ue. Oct. 2 - We started early but two hours out the old Captain got worried and ent in for shelter again at Buffalo River at 8 a.m.

ed. Oct. 3 - Fine day with light offshore breeze. Left Buffalo River and arrived t Fort Resolution shortly after noon. Took a stroll up through the town. There s a very large R.C. mission, new and well-kept buildings. In the boarding school are ~~as~~ 87 children ~~attendance~~ one father told me. A striking feature of the place is the long ew government built pier with a lighthouse at the end. The town has electric ight. Characteristic for the country is the way things are going. When I was ptown at the mission, the ship blew three whistles and I hurried back. There as however no signs of pulling out yet. The pier was full of people chattering ith passengers. Nothing happened. Some freight was on the pier waiting to be oaded. Half an hour later some of the deckhands loaded some on the boat. More blasts f the whistles. Captain came down and had a chat with an old fellow on the pier. nother half hour more blasts - nothing happened - some more freight was taken on. ore blasts. Ropes were cast off and the plank drawn in when it was discovered that we had some freight for this place. Gangplank put out again. Freight unloaded. ore blasts. Boat pulled out a quarter of an hour later. Entered Slave River and travelled most of the night. Thin ice in the foot of bay. Have a bad cold. Everybody has for that matter.

Thur. Oct. 4 - Cold and calm. We saw lots of fine spruce on the low alluvial flats bordering the river. Country is very low, but water level of river seems more stationary than in Mackenzie. Got in to Smith at 4.20 p.m. First thing we heard as that the S.S. Athabasca River had left Fitzgerald this morning. Mr. McDougal et us on the bank and told us that the Captain had telephoned from the mouth of Peace River and asked if we were in sight - if so he would have come back. S.S. Echo also left this morning with only two passengers. We shall have to go up in scows and were to wait for the M.S. Canadusa to return from McMurray. The earliest the boat may leave is Monday. Mr. McDougal went with us uptown and installed us in the Conibear Hotel and later took us down to the Government office where we got our mail. Asked Mr. McDougal if it would be possible to arrange a trip in the park and he at once got busy on the telephone and in a few hours had arranged everything. The parks had all their boats out but Mike Ryan was going up to his Hay Camp in the morning. We were to go up 30 miles above Fitzgerald to the Govt. Hay Camp. There a buffalo warden would meet us with saddle and pack horses and take us to the place where according to the latest reports buffalo has been seen a few days ago. Repacked some baggage and handed over to Mr. McDougal two gallons of alcohol that we have left over.

ri. Oct. 5 - Cold and rainy day. Made preparations for the trip and had several nteresting talks with the Agent. Checked out in the afternoon and crossed the ixteen mile portage to Fitzgerald. There is a fairly good road and not less than ixteen cars in town. The fare is $4.00. The portage is the first place where e have seen Pinus Banksia also Camp. rotond, Pot. tridendata.

at. Oct. 6 - Cold but fine day. Left Fitzgerald in Ryan's boat at 6.30 and rrived at the Hay Camp at noon. The warden was there with three saddle horses nd one pack horse and after lunch we started out. Followed some grassy slough or a few miles and then went through some poplar and aspen woods. About 4 we came to first prairie and presently saw one large wood buffalo bull. A splendid specimen. The wind was just right and did not take any notice of us till we were

thin a hundred yards. I had my camera ready and stole up closer with the horse d not till I was 40-50 yards away he started to get uneasy. I took 8 snaps of m before he finally decided to beat it. Travelled through woods and willows d some prairie till dark and camped on a creek. The soil is salty and there no water. The creek is briny too and the water bad. Usually travellers carry ter but we had no canteens and had to use it. We had no tent. Rained a little ring night.

n. Oct. 7 - Continued over prairie and sloughs with lots of buffalo signs till on but saw nothing. Tried to cross the creek on old beaver dam but one horse t off the dam and fell into quicksand. We finally got it out but had to give the crossing. Followed creek. Saw lots of new beaver dams and beaver working. e last two years the closed season on beaver has wonderfully increased, the aver warden told us and they were getting thick now. We were trying to make a ad construction camp but did not get in till two hours after dark.

n. Oct. 8 - Raining a little. Had to be back as the boat was supposed to be at y Camp at noon. Followed the new wagon road out to the river and from hence the ine down to the camp where we arrived at noon. Called up the office at Smith. at not left yet.

e. Oct. 9 - Boat arrived at noon. Two gasboats with two covered scows with a mber of rough bunks. Tied up below the Peace at dark.

d. Oct. 10 - Snowstorm. Arrived at Chipewyan in the early afternoon. Lake too ugh.

ur. Oct. 11 - Crossed lake and ascended the Athabasca about thirty miles.

i. Oct. 12 - En route. Banjo Joe.

t. Oct. 13 - Water getting swift and low. Tied up four miles below McMurray.

n. Oct. 14 - Got in to McMurray. Town pretty dead on account of Sunday. Got a 4 room at the only hotel and had to double up in a 1½x2 bed. Train leaves on ursday! Fine weather.

n. Oct. 15 to Thur. 18 - Waiting for the train. McMurray is a great place. Up rly and crossed the portage to Waterways. Roads were terribly bad and part of e way had to be made on foot. Train left about 10 a.m. Saw where the tarsands ve been mined. Experiments have been carried on and some shipments made to Edmonton t the freight has been prohibitive and now they are trying to extract the tar d add the sand when the tar is to be used. Met a couple of promoters on the ain. Father and son. They have been in here this summer and are interested in portation of fish and meat from this country.

i. Oct. 19 - Arrived in Edmonton in the evening. Tried the MacDonald but could t get rooms. Probably we looked too disreputable. We were still in our field othes and mocassins and I was dragging Junior around on a rope. Succeeded at e Royal George which we found to be a kind of northern hotel where all the rtherners meet. Much like the Frye's Hotel in Seattle. We were constantly meeting friends and asked to come over for drinks. One of the prospector's party from hanni River, Morrison, evidently is a man of some influence. He had us meet a mber of prominent western men, mostly politicians. Went out in the evening., red the office, talked for half an hour to a man from Edmonton Journal who got story suitable for printing. While I was talking to him a man came up and showed a wire he had just received from Mr. Finnie. There had been rumours in the penhagen press to the effect that we were reported lost and Mr. Finnie was

anxious to find out if anything had happened.

Sat. Oct. 20 - Went out to the University of Alberta and met Dr. Lewis and Dr. Allen - The former is a botanist, the latter geologist.

Sun. Oct. 21 - Dr. Lewis came down in his car and took me out to some very interesting muskegs outside the town. He had been boring and digging here recently and made some very interesting observations on the recession of peat and sphagnum. The muskeg flora here is surprisingly similar to that of the north. In fact I think all the characteristic species are common to both.

Mon. Oct. 22 - Left for Saskatoon early and arrived at 4 p.m. Dr. Hadwen was down to meet me at the train and took me out to the University where we found a place for the dog. Went to his house that evening and met a number of people mostly from the University.

Tue. Oct. 23 - Had a good long reindeer talk with Dr. Hadwen out at his laboratory in the morning. Left on the 5 p.m. train.

Wed. Oct. 26 - Arrived in Ottawa early in the morning.

FC 3963 P67 NMNS
Porsild, Alf Erling, 1901-
Field journal of an expedition through Alaska, Yukon and the Mackenzie district, 1926-1928

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